

Introduction to Course and Writer

→ This note of Business Research Methodology has been made by AKASH KANDU, BBA-5th, CCT with a great effort and a deep analysis to provide a best understandable and easy note for the readers.

This note has ^{been} made according to the course content and syllabus from various sources. This note tries in its possible way to make students understand in a comprehensive way and also guides the students to achieve a good scores as well.

As this note has ^{been} prepared just according to course content and syllabus but due to some problems like absenteeism, weakness, and source crisis the content may not be in series. So, ~~for~~ the left contents which are not present in series can be obtained since the page no.

I'm begful for an apology for such weaknesses.

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Meaning of Research

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- The word Research is formed with the combination of two words re and search where the word re means again or repeatedly and the word search means the investigation or identification any specific problem, issue or subject matter. Thus, by the word research we simply can mean that, re-search is a careful investigation for new facts in any branch of knowledge as research doesn't cover the entire scope of any particular problem, issue or subject matter.

Definition

- Simply research can be defined as the manipulation, investigation and generation of different things, concepts, solutions for the purpose of expanding, correcting and verifying knowledge for construction of different theory and solution.

Different scholars & writers defines the research in their own way. Some are:-

Advanced Learner Dictionary: "A careful investigation or inquiry especially through research for new facts in any branch of knowledge"

D.K. Bhattacharya: "A documented and organized analysis of subject based on borrowed materials with suitable acknowledgement and consultation is main body of paper"

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Business Research

→ Business research refers to well organized effort to investigate a specific encountered in a business for a work setting which requires a solution.

In other words, business research is a process of identifying critical issues, gathering relevant information, analysing the data in the way that helps for implementation and decision making of right option in business by using a systematic and well organized format along with certain effort.

According to a business research scholar, Mrs. Uma Shekaran: "Business Research is an organized, systematic, database, critical & objective inquiry or investigation into a specific problem; undertaken for the purpose of finding answers or solutions."

From this definition we can conclude that business research is a phenomena which provides the necessary information to manager to take the successful decision.

Nature and features.

→ Some of the nature and special features held by research are described below:-

a) Objective : There's no any research which is done without any specific objective because without objective the research is useless. So, it is a fundamental nature of a research.

b) Control : The research must have the ability to control all the ^{independent} variables. However research cannot control over those variables which are tested or experimented upon.

c) Generalization : Any research should be general in nature. In other words, it should use similar kind of methodology to find out solution and should be also similar and general so that it can be applied on such similar situation.

d) Free from biasness : The research's another important feature is that it should be free from biasness and fully logical. It should be based on fully objectivity but not on subjectivity.

e.g. Systematic :- A research must be very well organized and systematic i.e. the research must follow well planned steps which must be interrelated to each other in understandable form.

f.g. Reproducible :- A research must be reproducible in nature i.e. it should be made in an approximate manner which gives similar kind of ideas to solve other problems.

g.g. Directed to find solution :- Research identifies the problem and investigate on different aspects through different methods to find out the solution of a problem.

h.g. Logical :- A research must be logical in nature, that means it shouldn't only interpret the result but also it should prove the things through different logics.

Types of research

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→ Generally research is a multi-direction never ending process which is categorized into various types. However, it is mainly of two types:

1. Basic or Fundamental Research

→ The basic/fundamental research is the type of research which is conducted largely for the enhancement of knowledge but not to solve any current or immediate commercial problem.

The main objective of this research is to generate more knowledge and deep information about any subject matter and issues.

This basic research helps to build up theories which are applied to solve different issues of future; but not to solve the immediate problem. According to P.V. Young "Gathering knowledge for knowledge sake is termed as pure or basic research."

According to D.B. Bhattacharya "A research that is primarily interested to find out certain basic principles not the solution of a problem is basic research".

From above definitions, we can conclude following points:

- i. Develops fundamental principles.
- ii. Helps to understand problem in depth.
- iii. Help to solve problem through various alternative.
- iv. Doesn't solve immediate problems.

by Applied or Action Research

→ Applied or action research is the type of research which is conducted or designed to find out a solution for an immediate problems or the practical problems of the modern world but not for acquiring ^{deep} knowledge or knowledge enhancement.

The main objective of this research is to find out solution of real life problems that takes place in an organization or in any other situation & institutes. In contrast to basic research, applied research is conducted whenever required, or whenever any problem occurs.

Applied research is done to take action or response against any immediate problem.

According to P.V. Young "generating knowledge that could aid in betterment of human benefit" is termed as applied research.

According to D.B. Bhattacharya "A research method that is used in social science research which help to contradict and modify any existing theory and help to formulate the policy is applied research".

From above definition, we can conclude following points

- i) Helps to solve real life problems
- ii) Helps to prove the concepts
- iii) Conclusion from applied research can be implemented immediately

7. Difference

<u>Basic/Fundamental Research</u>	<u>Applied/Action Research</u>
<u>Definition</u> :- Generating knowledge for indepth knowledge or knowledge enhancement of a man or organization is basic research.	Generating knowledge to aid the betterment of human benefit by solving immediate problems and issue is applied research.
<u>Objective</u> :- To find & develop the theories	To find solutions for current issues
<u>Focus</u> :- focuses on the human interest.	focuses on solution and problems of people in society.
<u>Practicle</u> :- Can be implemented immediately	Cannot be implemented immediately
<u>Assumption</u> :- Variables are dynamics	Variables are constant.

Application of scientific thinking in Research

→ In today's modern world each and every work must be scientific and systematic. In the same way, the research done in today's context should compulsorily be scientific. The research can be made scientific only through the scientific thinking. Here, "scientific thinking simply refers to the method or thinking which is totally goal focused, solves the problem step by step logically in organized and rigorous manner by identifying problem, gathering data, analysing data and drawing a meaningful conclusions." The research prepared by using or applying scientific research are very much accurate and systematic. Similarly, such researches are much objective in nature that minimizes or solves the problems.

Difficulties in applying scientific thinking in Research

→ Research is a subjective discipline which is concerned with social science and social sciences differs according to situation; because social problems are not similar always. Therefore the researchers faces various difficulties in applying scientific thinking in research. Some major difficulties in applying scientific research are as follows:

a) Complexity of subject matter :- Social sciences are another form of human behaviour which changes with the pace of time. Different needs, values, norms etc of people differ to each other through different unlimited uncontrollable factors. But, scientific ^{method} ~~fact~~ is used only for controlled specific factors or subject matter. Thus, it is difficult to use scientific model in research.

b) Difficult to obtain accurate measurement :- As we clearly know that research is social phenomena containing different human behaviour such as: attitude, perception, feelings etc which are exactly unmeasurable in nature. But to apply scientific thinking we need exact measure. Therefore, we can't apply scientific thinking in research.

c) Subjectivity of social events :- Different social events takes place within the society are subjective which gives conclusion in subjective manner too, which exactly cannot be measured. But scientific thinking requires exactness. Therefore we cannot apply scientific thinking in research.

d) Vested interest of researcher :- The another reason that we cannot apply scientific thinking in research is the vested interest of researcher. Research use different subjective tools to draw conclusion according to their interest which mayn't be objective in nature. Therefore it becomes a difficulty for researcher to apply scientific thinking.

e.g. Lack of universality of social events :- Social events are not similar and they differ according to time and place; so they are not universal in nature. Since they are not universal, they won't be accepted all over the world and due to lack of universality we cannot apply scientific thinking on them. Thus, it is a great difficulty.

⇒ Emotional tendencies :- Different social events affect the persons' emotions and thoughts. Generally the opinion provided before attending social events and after its attendance of the people differs. Since the opinion and thoughts differ, the working pattern also differs. Thus, it is difficult to apply scientific thinking on research.

Scientific Research

→ In very simple words, scientific research is the systematic research that logically solves the problem by analysing all the dimensions of problem, collecting data, identifying the problem's real cause and finding out an appropriate solutions of problems.

In other words we can say that scientific research is research conducted on the basis of collected facts, analysing data, but not on the basis of intuition, experience and estimation.

Different scholars have their own views and definitions on scientific research. Some are:-

F.N Kerlinger defines "Scientific research is a systematic, empirical and critical investigation of proposition about the presumed relationship among the variables."

B. Ostle and R.W. Mensing defines "Scientific research is an investigation followed by experimentation, observation and logical arguments from accepted postulates and a combination of these three in varying proposition."

Characteristics of Scientific Research

→ The scientific research is an empirical research that has different characteristics. Some of them are:-

a) Rigorous → Rigorous refers to the degree of exactness and carefulness of a research. A scientific research is done through different objective matters which are measurable as well as ^{rigorous} exact in nature. Therefore a scientific research is ~~exact~~ ^{rigorous} in nature.

b) Purposive → A research should start with a definite aim because only the purpose or aim of research determines the sample selection, data collection and its using methodologies. The research without aim is useless. Therefore the research must be purposive to achieve the goal and avoid the errors.

c) Replicability → The scientific research should be replicable in nature. Replicability means the similarity in findings or solution after conducting the research again and again. If the observations are not repeatable and results are not similar, then our research will be considered unreliable.

dy Objectivity → Objectivity is one of the basic character of research. The objectivity provides accuracy and carefulness in research without any biasness. The data and facts collected from different sources for observation should be exact and based on measurable fact but not on subjective facts.

ey Testability → Testability is also an important character of scientific research. The scientific research logically develops different hypothesis through different relationship with variable which can be tested through different mathematical & statistical tools. Thus, scientific research should be testable.

fy Operational definition → Different variable used in scientific research should be clear and defined which means that it should eliminate confusion in meaning and communication process. Similarly it should clearly defines anxiety which causes mistake in works. Thus, operational definition is an important character of scientific research.

gy Generalizability → Any scientific research should be generalizable in nature that means that it can be able to apply in wider field and find out the solution. The much area research covers, the much it will be consider much useful. Therefore, scientific research should be generalizable.

Emerging Paradigms in Research

→ Simply, paradigms refers to the pattern of beliefs and practise that regulate inquiry within a discipline by providing process through which investigation is achieved. Major paradigms of research are:-

a. Ontology → Simply the ~~an~~ word ontology means "the science of being" which deals with nature of reality. Ontology also considered as the belief that interpret the reality of an individual. Similarly ontology is also concerned with the central question of social entities or facts that may be perceived as either subjective or objective. The objectivism and subjectivism are two important aspect of ontology where the objectivism is ontological position which assumes social phenomena and their meaning exist in the world and are independent to social actors but subjectivism assumes that social phenomena are created from perception and consequent action of social actors.

b. Epistemology → Epistemology is the theory of knowledge concerned with methods, validation and other possible ways of gaining knowledge of social reality. Also we can say that epistemology is a knowledge gathering and theory development process which is not non-static but ever changing in nature. The epistemology

can be understood through its components, which are:-

* Positivism :- It is the research philosophy that is adopted from natural sciences. According to positivism, the knowledge can be developed by investigating the social reality through observing facts. Similarly it also says that research starts with theory development process which starts with hypothesizing fundamental laws and deducting complication in hypothesis development complication. Positivism indicates following assumption such as: i) unity of scientific method, ii) casual relationship, iii) Empiricism, etc.

* Interpretivism :- Unlike positivism, interpretivism believes that social world can't be understood by applying research principles from natural science, but it can be understood in the way on which ^{the people,} they interpret and perceive the world. Similarly it also claims that objective observation of social world is also impossible as it is guided by behaviour and actions. According to interpretivism, the knowledge and theory is developed and built by developing ideas ^{obtained} ~~abstracted~~ from interpreted social perception and constructions. Likewise interpretivism also focuses properly on generalization of interpreted & theory build.

* Realism :- Realism is the combined form of positivism and

interpretivism that share a combined principle i.e it contains the features of both positivism and interpretivism. Positivism in the sense that it accept the existence of human society and the interpretism in the sense that it tries to know and understand the happenings of human life.

Methodology → The another paradigm of research is methodology. Methodology here refers to general principle or procedures which lead or guides our investigation pattern and proves our knowledge as a valid one. It provides the ^{idea regarding} data, design of research, selection and other various important informations related to research.

Approaches to Research

→ Simply the approaches to research refers to the viewpoint to look, analyse and understand the research and its system. The whole research system can be view different viewpoint or approaches but it is mainly categorized into two types:

a. Quantitative Research: The quantitative research is clear from its name itself i.e. quantitative which means measurable, comparable and identifiable. In other words, quantitative research is the research which is conducted on the basis of measurement of quantity. Quantitative technique of research can be used in those issues which are measurable easily. Quantitative research find the result by using different mathematical, statistical tools. It uses mean, median, f -test, t -test to draw the conclusion. However, Quantitative data are derived mainly from secondary sources. Similarly, also we can say that this research applicable to answer the different reasons for existence of problem in the organization or society.

b. Qualitative Research: The another approach to the research is the qualitative approach. Qualitative research is the research which is concerned with the quality and quality related process rather than the quantitative phenomena.

In other words, qualitative research is totally concerned with the quality of research whose main aim or objective is to get depth knowledge and explain issue rather than the finding solutions. Qualitative research uses different sources, interview, and data collections. Qualitative research collects data from individual, organization, books and other written documents, environment, medias and events.

Business Research

→ Business research is simply defined as the systematic and objective process of gathering, recording and analyzing data to help in the business decision making.

In other words, business research is the process of collecting the data and information from different source that assess the manager and management level in making the decision and formulating different plans and policies.

Business research is very important for any business organization in decision making and different strategy implementation which might be related to employees development, product planning and distribution, marketing strategy and other many business strategies. Similarly business research also helps to find different opportunities and threats in organization and also helps for organization to develop different alternatives to cope the situations or threats.

Thus, from above these definition it is clear that business research is conducted to facilitate different managers in making decision and its implementations.

Types of Business Research

→ Business research is very supportive in decision making in the field of business. On the basis of ^{natures} functions, business research is classified into three groups; which are explained as:

a) Exploratory :- Exploratory research is conducted to clarify the ambiguous problem. Whenever the manager realizes any problem within the organization then he/she take the help of exploratory research to understand the problem in better way and take a proper decision which should be correct and favourable for everyone within organization.

b) Descriptive :- Descriptive research is the another type of business research which is conducted to describe the characteristics of any population or process. Descriptive research is also known as reasoning research which answers the questions like who, what, where and how. This research helps for market segmentation of organization. Descriptive research provide a clear and accurate answer for any questions or problems.

c) Casual Research :- Casual research is another business research which is conducted to see relationship among variables is casual research. Its main objective is to clarify the relation; among different variable such as: prediction of sales due to change in packets, advertising, innovation etc. Casual research are mainly used by the firm who want to change their strategies.

Role of Business Research

→ Business research is like the life blood to any organization. It has a great role in organization. Thus, we can say that the role of business research is to concrete information for the decision making. The role of business research can be made much clear through its certain given points.

i) Informational Role :- Business research plays an important role i.e. informational role under which it collects the information from different internal and external sources which is very useful in decision making and problem solving.

ii) Evaluator of method :- The another role of business research is to evaluate the method which have been used by different organization and considered as the best one among various method.

iii) Knowledge developer for practical purpose :- Business research analyses the information obtained from different sources and develop the knowledge from those information and solves the problems practically.

iv) Planner and decision maker :- Business research provides various strategical information and hard facts which are useful in various planning & decision making.

U7 Role of intelligence :- Business research collects information from different secondary sources such as public proceedings, web-sites, government agencies and competitive organization and provides to its client organization due to which we can say that it plays the role of intelligence.

Value for decision making

→ Business research is just like the backbone for any business organization because only the business research provides the right information on the basis of which different decisions are made. The prime managerial value of business research is to reduce the uncertainty and make the decision through its given processes.

i) Identify the problems :- Business research is very useful in decision making as it determines the nature of situation and scans the activity to identify the problem and its real source. It scans the environment and identifies ^{that} what is actually happening in organization which is creating the problem.

ii) Diagnosis and assessing problem and opportunities :- After identifying the actual problem or potential opportunity, research diagnoses the situation and understands the problem or opportunity, its actual cause. If researcher finds the problem then h/she should take necessary steps or action but if it finds the opportunities then h/she should explore it up.

iii) Selecting course of action :- After diagnosis of problem, the researcher develops different applied courses of

actions or alternatives and selects a best course of action or alternative to solve the specific problem. However, it uses different methods to select the best alternative from the available course of action such as: cost factors, sales, market potentialities etc.

iv) Implementing a course of action :- After selecting the best course of action, the organization needs to implement it. A manager may use different tricks and techniques to implement the course of action.

v) Evaluating the course of action :- Evaluation ^{of} ~~the~~ course of action simply refers to formal and objective measurement and appraisal of the extent to which the implemented action has achieved the objective. After evaluation of course of action, the manager may conduct a research to get feedback or information about the success of ^{selected} action.

Ethical consideration in business research

→ Ethics simply refers to those assumptions on the basis of which a person decides anything as right or wrong. It is very necessary to consider the ethical issues while conducting any research. The researcher must decide that there shouldn't be any party affected due to research conduction. If the research is conducted or presented by going out of value and norms of research then it is considered as the unethical behaviour. To be ethical the researcher must follow up following works:-

i) Not pressing anyone to get information :- The researcher must not give anyone any physical, moral and other pressure to get essential information required in research. Some information in business research may be confidential which cannot be leaked, therefore researcher mustn't press respondent for such confidential information.

ii) Not deception of participant :- Researcher should give a clear and correct information to the participant but not the wrong one; because such wrong information can adversely effect to research result. Thus, researcher must provide freedom to participant for giving their opinions but not press them to get expected answers.

iii) Not fabricating the data :- Researchers should present the facts, figures and data in their actual form while presenting it rather they shouldn't modify and correct it because it may decrease the value of research.

iv) No manipulation :- A researcher should explain research design without any correction or prejudice. Similarly, different conclusions drawn should be presented as it is in the report but not according to any pre-conceived opinion.

v) No illegal works :- A researcher must conduct its researches legally i.e. by following the government's regulations and rules of organization but it shouldn't be collected illegally.

vi) No discrimination :- Research should be free from discrimination i.e. it shouldn't be analysed on the basis of discriminating factors like:- cast, sex, culture, religion, qualification etc. Equal value is to given to all the respondent.

vii) Respect to social and culture norms :- Every society has its own culture, norms, and values. Researchers must not harm any society's culture while conducting research. rather it should show neutrality while conducting research.

iii) Respect to intellectual property :- Researcher must respect to the intellectual property of other writer and researchers. Researcher mustn't use any material of other writers without prior permission. If it is used then the researcher must show it in reference or bibliography other wise it may be considered as plagiarism (Intellectual theifing)

ix) Protection of participant's right :- Every participant has its certain rights such as:- right of participating, right of getting information, right of secrecy etc. Researcher mustn't violate such rights of participant rather h/she should protect the participants rights.

Literature Review

Concept & Meaning

→ A comprehensive review of ^{previously} available document and preparation of summary of available documents study is known as literature review.

Review of previous studies is very important in research as it helps to understand our problems better and provides information about different methodologies which can be used to solve our problems. Literature review can be in many forms such as: form of part of large report, in form of thesis, and may in form of book and so on.

The main purpose of literature review is to convey information to researcher about the condition of any particular subject matter in past.

Thus, The literature review is the process of analysing any subject matter in current situation on the basis of previous study comparatively.

Different scholars have their view, among which,

Walliman :- "A literature review is a summary and analysis of current knowledge about a topic or areas of enquiry."

Cardoso and Gartner :- "A literature review is self contained unit in study which analyses a published body of knowledge through summary and comparison of prior research studies."

Purposes

→ Any scientific research should be supported and guided by previous studies. Literature review provides continuity in research. The major purposes of literature review are as follows:-

a) To identify the gap :- A researcher finds out the untouched areas after literature review which is known as ~~the~~ research gap. After going through literature, only the researcher can find out the research gap as the topic of research. Thus, the purpose of research review literature is to identify such research gap.

b) To develop theoretical framework :- Literature review provides a comprehensive theoretical framework, which ultimately helps to formulate hypothesis which is useful in various research testings.

c) To develop research design :- The another function or purpose of research literature review is to design the pattern of research as research literature review provides the knowledge about the variable to be included, measuring tools and techniques, procedures etc.

d) To update on current issues :- Literature review helps the researcher to know about current issues of a particular area, its changing environment, causes of issues and so on which keeps the researcher updated.

vi) To know the methods of data analysis :- Literature review is also very useful in data analysis ~~as it~~^{to} get conclusion as literature review provides the idea to use appropriate tools for different natures of data which helps to increase the reliability of research.

vii) To know research design :- Different designs are used for different researches which may not be applicable in all the researches. Thus, the literature review is helpful in research design identification.

viii) To help for the success of various research design :- Various researches, ^{designs} ~~also~~ used in different researches which may provides the various result. Therefore the researcher must identify the best result among various design which help him to find the success of that design. Therefore its another purpose is to determine the success of various research design.

Steps / Guidelines for conducting Literature Review

- Any of literature review is done or conducted under the certain assumption and through certain steps & guidelines which are given as follows:-
- * The issue (problem) selected should be comprehensive and concentrated.
- * Discard or avoid unnecessary materials.
- * Original source is to be used (if possible)
- * Include the major objective, methodology and findings.
- * Focus on techniques of using and avoiding the available materials and weakness of materials.
- * Materials should be collected logically and arranged rationally.
- * Analysis of related and informational materials.
- * The subjects matters should be clearly explained and defined.

Searching, obtaining and Evaluating literature

→ Any of the literature should be searched and evaluated by the literature ~~to~~ but it shouldn't be donated or given by any other. A research could be search from various sources or from other independent sources, clubs, comitee, and online databases etc.

A researcher can use the computer sources and various required materials to get the topics, subject and matter of the literature.

While reviewing the collected materials, researcher should go through the certain materials. In order to obtain the literature our collected information should be arranged and managed systematically in a meaningful manner which provides some beneficial and usable piece of information. Similar, in the course of searching, we can use different secondary sources such as: books of related authors, magazines & newspapers, and other many more sources.

Evaluating the literature

→ All the materials which are collected for the literature mayn't be equally important, useful, complete and accurate or even may be contradictory to present research work. Therefore the researcher need to evaluate it on ^{basis of} different ^{comp} ^{onents} ^{Such as:}

- Accuracy
- Suitability for subject matter
- Scope
- Arrangement
- Author
- Update information
- Treatment & style
- Publisher
- Illustration, table and diagrams.

Thus, researcher must evaluate the collected information on the basis of above given components which is very important for building or preparing a literature. Similarly, researcher also should consider the effects of literature, tools used and proper maintenance of research.

Literature Search through Internet

→ The world is moving and developing with developing pace of technology. Nowadays, the literature search and review is totally done through the internet. Internet is a world wide network of computers that can provide access to a vast range of literature and literature related informations.

World Wide Web (WWW) is the mostly used part of internet which provides great knowledge and information about literature.

Most of researcher are based on the internet for different research surveys and informations, as many of pages are being uploaded by different writers, authors and professors on internet that helps any researcher to get instant and a huge source of information for literature.

Researcher must evaluate and analyse the informations obtained from internet as all the informations mayn't be usable. Similarly researchers can use different required components while conducting literature search through internet; such as:- adress of home page, internet sites, search tools used in internet and so on.

Some of prominent search engines are used in literature search through internet are:-

Google : <http://www.google.com>

UC browser : <http://ucbrowser.com>

Hotbot : <http://www.hotbot.com> and many more.

35. Problem definition

→ Problem definition is the crucial step in the research process which simply denotes the gap or difference between the actual and desired state. In other words, problem definition is a very clear and precise statement of question or issue that is to be investigated for finding an answer.

Different scholars and practitioners defines the problem definitions as:

Mr. Sekaran :- "Research problem is any situation where a gap exists between the actual and desired ideal state."

Herlinger :- "A good problem is any situation where there is use of interrogative sentence or statement is used that shows what relations exists between two or more variables."

Different scholars and professors share their own views and ideas but all of them provides a concept in conclusion that is "Problem definition is the gap or abstract between any two variable or state of research that occurs or exists in the process of research."

Any of problem statement must have these characters:

- It should raise question between variables.
- The relationship between variables should be explained clearly.
- The statement must suggest a method of researching.

* Steps in Problem formulation

→ There are some well defined steps to form or formulate the problems in research. They are:-

a) Identify broad problems area : First of all, a researcher need to evaluate, identify a broad problem or its source from the different observations and then he/she need to make a systematic and planned observation through different informational sources such as: published reports, internet, surveys etc. to solve the problem-

b) Divide the subjects into sub-areas

→ The another step in problem formulation is the division of a broad problem into very short (sub) areas, which helps to select the topic of interest and convenience.

c) Decide about an area : The third step of research problem formulation starts after dividing broad problem into sub problems. In this step the researcher choose the topic of his/her interest specifically

d) Defining problem : After choosing a specific problem, the researcher can define the problem by analyzing the situation through interview, survey or personal conversation that helps to define real position of problem

e.g. Decide about the objectives: The final step of problem formulation is to determine or decide the possible objectives that may be helpful to find out the solutions that must be attainable in time and with the available technical, financial and human resources.

Considerations while selecting Research Problem.

→ A research cannot be simply made, because are some certain components are needed to consider for selecting research problem. Those components are:

a) Interest : A researcher must select the topic of problem on which he/she is interested in because if he/she doesn't select the topic of interest then he/she may find a lots of complexities & difficulties in data collection & research.

b) Appropriate : While formulation or selecting the research problem he/she must care about the appropriateness of that research problem is appropriate or not? is it too narrow or too vague ~~or~~ or not?

Thus, research problem must be appropriate.

c) Current issue : The another consideration that should be taken while selecting a research problem is that the problem chosen should be focused towards any current hot issues rather than any old or out dated issues.

d) Study limitation : The researcher also must consider the study limitation i.e the researcher must include those variable which can provide a good information & data.

e) Practical use : The researcher must consider that the conclusion he/she has drawn by solving a certain problem should be practically applicable or usable.

Research Question

→ Very simply, research question is defined as a statement that identifies the whole process, factors and system to be studied during the research process. The basic objective of research question is to investigate about those components which are required to be collected.

Research question is very important in a research work because it also indirectly indicates about the methodologies to be adopted and guides all stages of inquiry, analysis and reporting.

A research question should be very clear, feasible, significant and ethical.

Types of Research Question

→ There are various types of research question but among them, some important types of research questions are described below:-

a. Descriptive question

→ Descriptive questions are those kinds of question which generally describes an on-going (current) situation of any event, object or issues. In other words, the descriptive question helps to collect the data of any existing scenario in a very descriptive (detailed) way. For ex: Current state of quality of worklife in Nepalese commercial banks.

b) Observational questions

→ Observational questions are also known as the relational questions that help to know about the relation between two or more variables. These variables generally show the relation between the dependent and independent variables. **For ex:-** Does the working environment of organization affect the organizational goals?

c) Causal questions

→ The another type of research question is cause and effect or causal question which describes cause on ^{one} variable's affect to outcome of another variable. Such question generally evaluate the effectiveness of any event. **For:-** If Increment of employee's salary increase their performance level?

Hypothesis.

→ In very simple words, hypothesis is an intellectual guessing about the solution of any problem or issue. In other words, hypothesis can be defined as logically estimated relationship between two or more variable expressed in the form of tested statement that shows the relationship and direction between the variables and helps to find out the solution of problems.

Different scholars defines it in their own way:

F.N. Kerlinger "A hypothesis is a conjectured statement that implies a relationship between two or more variables."

U. Sekaran "A hypothesis is a logically conjectured statement that implies a relationship between two or more variable expressed in a testable statement."

Thus from above these definitions, we can conclude that hypothesis is an intellectual prediction about the solution of any particular problem by constructing the statement that shows the relationship between two variable i.e. dependent variable and ^{independent} variable.

Functions of Hypothesis

i) Shows the area of emphasis

→ Hypothesis tries to emphasize ~~at~~ at a particular area at which the whole focus is to be given. In other words, it clearly identifies the variable so that researcher can get a proper idea for research.

ii) Provides guidelines for data collection

→ Hypothesis provides a strong direction to researcher regarding collection, analysis & processing of data.

iii) Informs about area of subjective priority

→ Hypothesis helps to give a subjective priority on certain elements by identifying the events and issues on which subjective analysis is essential.

iv) Basis of research

→ Hypothesis is a pure base of research because the hypothesis is done by using different statistical tools and data and if hypothesis get proved, it becomes a theory and a theory is a major outcome of research.

v) Helps for empirical tests

→ Hypothesis helps for different empirical test as the hypothesis itself is tested by mathematical tools which are most reliable one.

Types of Hypothesis

→ There are lot of hypothesis types. However all of them are generally categorized into four major types which are explained as:

i) Descriptive Hypothesis

→ Descriptive hypothesis generally presents the existence, size, type and distributions of variables.

Descriptive hypothesis is a single variable hypothesis which cannot show the relationship between variables. Therefore, it is not much preferable.

Instead of it research questions are used for research.

For ex: In Hetauda (case), Current spices market share (variable) stands at 40 percent.

ii) Relational Hypothesis

→ The hypothesis that explains the relationship between two or more variable with respect to some case is known as relational hypothesis. However the relational hypothesis is categorized into two types:

1) Co-relational Hypothesis → Correlational hypothesis states that the variables occurring together in some specified manner ^{causes} no any affect to each other.

For ex: Well educated people have higher amount of knowledge.

Hypothesis
 b) Exploratory research → Exploratory research hypothesis are those hypothesis which states that the change in one variable (independent) leads change in another variable (dependent) too.

For ex: Higher level of employee training (independent) enhances the working pattern of employee (dependent).

iii) Directional and non-directional Hypothesis

→ Directional hypothesis are those hypothesis which generally indicates the degree of exactness such as: more or less, like or dislike, positive or negative etc. It is known as directional hypothesis because it shows the direction to relationship of two variables. For ex: Greater the workload, lower the job satisfaction of worker.

Non-directional hypothesis are those hypothesis which shows the relationship or the difference between two variable but doesn't direct the relationship of variable. It is formulated in that case, when ^{specifying} the degree of exactness between two variable is not possible. For ex: There is difference between the working pattern of HR department and Marketing department.

iv) Null Hypothesis and Alternative Hypothesis

→ Null Hypothesis is a statistical hypothesis that is tested for possible rejection assuming that it is true. The null hypothesis is called null

because it usually reflects the "no-difference" or "no-effect" situation. Thus, it is an hypothesis set up for possible rejection. It is denoted by H_0 .

Alternative Hypothesis is a statistical hypothesis that is tested for each possible selection assuming it is true ^{In other words}. The alternative hypothesis is a statement expressing a relationship between two variable indicating difference between groups. It is just opposite to null hypothesis and denoted by H_1 .

For ex: To test whether training increase productivity or not?

Null Hypothesis (H_0): Training doesn't increase productivity.

Alternative Hypothesis (H_1): Training increases productivity.

Features/Criteria of good Hypothesis

→ A good hypothesis must have given features or criteria.

a) Testability → A hypothesis is considered as good hypothesis ^{result oriented} when it is testable empirically in order to provide a research.

b) Simplicity → A feature of good hypothesis is simplicity that means it should be understandable, concise, written in simple words and sentences etc.

c) Relevant to problem → A hypothesis is like a guidance for solution of problem. Therefore it should be relevant to problem.

d) Specific → A hypothesis should be formed for a specific ^{correct} issue or problem but not for generalization in order to get a conclusion.

e) Clarity → A hypothesis is said to be good one, if it is clear i.e. free from ambiguousness and errors and mistakes.

f) Consistency to harmony → The hypothesis must be consistent to harmony i.e. free from contradictions, conflicts and mutual disbalance.

g) Power of prediction → One of the most important features of good hypothesis is that it must have the ability to predict the future scenarios that may future solution of any problem, any future events etc.

Research Design

→ Basically, research design is overall plan that a person makes, ^{which} ~~that~~ serves as a framework for completing his/her research work since beginning till the end.

In other words, it is the blue print for performing each and every research activities such as topic selection, data collection, measurement etc.

Different scholars defines it in their own way. Some of them are:-

Kerlinger F.N. "Research design is the plan, structure and strategy of investigations conceived so as to obtain answer of research question and to control variance."

C.R. Kothari "Research design is the conceptual structure within which research is conducted."

Zikmund "Research design is a masterplan specifying the methods and procedures for collecting and analysing the needed information."

Though different scholars defines in their own way, but all of them shares a common idea.

Elements of a Research Design

→ A research design is pure combination of its elements. The major elements of research design are:

i) Subject of investigation / Problem

→ In order to form a research design there is the basic requirement of topic of investigation or problem because until and unless the problem and its nature isn't clear, the data relevant to that topic cannot be collected. Therefore there is requirement of problem in research.

ii) Methodology / Data collection technique

→ The another element of research design is the methods or data collection techniques because methodology are the only element through different datas related to certain problem is collected.

iii) Methods of analysing data

→ The another element is data analysing methods because only a proper analysing method could give an appropriate outcome of research.

iv) Population and sample

→ The another basic element of research design is population and sample because they are very helpful for collecting different desired data and information related to the topic.

v.) Objective of study

→ Research design must specify and disclose about study objective/purpose very clearly. Therefore objective of study is a major element of research design.

vi.) Report writing

→ Report writing is another important element of research design which specifies information of problems, procedure of report and type of report etc.

vii.) Time period

→ The another element of research design is time period which generally shows the time that will be taken by researcher to complete his/her problem.

viii.) Dimension and context of study

→ The last but not least component of research design is dimension and context of study which specifies the aspects of research and area of its implementations.

Qualitative Research

→ The qualitative research are those research which generally deals with the components of social sciences which are related to human behaviour, culture, trends, relationship etc. In other words, quality research is a research that deals with the ^{problem having} attribute (character).

Much clearly, the research which is conducted to interpret, analyse and obtain-in-depth knowledge of an issue/subject is known as qualitative research.

According to different scholars the definition differs, some are:

Denzin & Lincoln "Qualitative research is multi method research involving an interpretive, naturalistic approach to its subject matter"

Gummesson "Qualitative research is an investigation in which the researcher attempts to understand some larger reality by splitting and measuring the components of reality"

Thus, Qualitative research is an important research which measures the character or attributes of any subject matter. The qualitative research is used in both the data collection and data analysis purpose.

Features of Qualitative Research

→ The qualitative research have its own distinct features. Some of them are:

- i) Interpretive :- Qualitative research deals with data related to behaviour, motivation, personality, character etc which are needed to be interpreted by analysing deeply. Therefore, qualitative research are interpretative.
- ii) Based on qualitative facts :- Qualitative research is totally based on qualitative facts that means it collects, analyses, interpret and explain the ~~qual~~ subjective components which shows the quality of any subject matter.
- iii) Purposive sampling :- The another feature of qualitative research is purposive sampling which means this research doesn't include the whole population but select samples to collect the data which have certain meanings.
- iv) Change in research design :- It is one of the features of qualitative research that generally denotes about the flexibility present in research design that allows the whole research can be changed if any difficulty occurs in data collection, interpretation and analysis.
- v) Primary data :- Qualitative research highly prefers for primary data which is collected by researcher.

himself as the primary data gives in-depth information, pure data and higher information etc.

vi) Holistic assumption :- It is one of most important character of qualitative research that generally denotes that qualitative research doesn't consider only a single factor but it considers each and every aspect and components.

Basic Assumptions of Qualitative Research

→ The qualitative research totally is based upon certain components which are known as assumptions of qualitative research. Some of them are:-

i) Holistic Approach :- Qualitative research considers all the factors holistically to explain about the cause of occurring process and other activities. It doesn't explain the events based on single facts but explains about the events having all aspect ^(factors) defined.

ii) Incorporates emergent designs :- This assumption states that the research design applied while conducting a research can be changed whenever required according to context.

iii) Research is Descriptive :- As qualitative research deals with social sciences in a descriptive manner, it needs to explain about subject matter, process of participation and so on in macro level. Therefore it is assumed that qualitative research is descriptive in nature.

iv) Concerned with process rather than outcome :- This assumption of qualitative research states that the qualitative researches are focused towards the processes and methods of research rather than the outcomes.

v.7 Involves fieldwork:- Qualitative research prefers the primary data which are collected by a person himself by going to the field of events or issue. Thus, this assumption assumes that qualitative research involves fieldwork.

v.8 Inductive process:- Qualitative research is not based on any hypothetical tests for solutions and data rather it bases on inductive process from lower level to higher for collecting data and performing every research works.

v.9 Subjective in nature:- The qualitative researches are totally subjective in nature, ^{that} explains about the quality, attributes and dimension of any event or issues than its quantitative facts.

- Qualitative research is descriptive

Types ~~of~~ of qualitative research

→ Qualitative research is used to explain the social sciences through different methods and studies. Some of them are:

i) Historical study :- Qualitative research collects the past data, information of past events, systematically so as to understand the cause, effect, and trend of past event to ^{apply and} anticipate (अनुमान) on present & future ^{repeatedly}.

ii) Grounded Theory :- Grounded theory is used to begin the systematic methodology in social sciences for construction of theory through analysis of data inductively.

iii) Ethnography :- Qualitative research uses the ethnography to explain about events, issue or problem of a particular community, race or culture through deep observation.

iv) Case study :- Qualitative research can also be done through case study manner where a single unit or case is analysed so as to know about the problems occurred.

v) Participative research :- Qualitative research can be conducted as participative research that is by personally involving in action related to that research. It helps to explain real experiences but not by assuming or recouping (taking) from any theory or text.

Qualitative Research Design

→ The qualitative research design is an interactive process that involves tracking (following and chasing) between different components of design, purpose implementations, theory, methodology and validity so that they could affect one-another.

Qualitative research design can be explained as given figure.

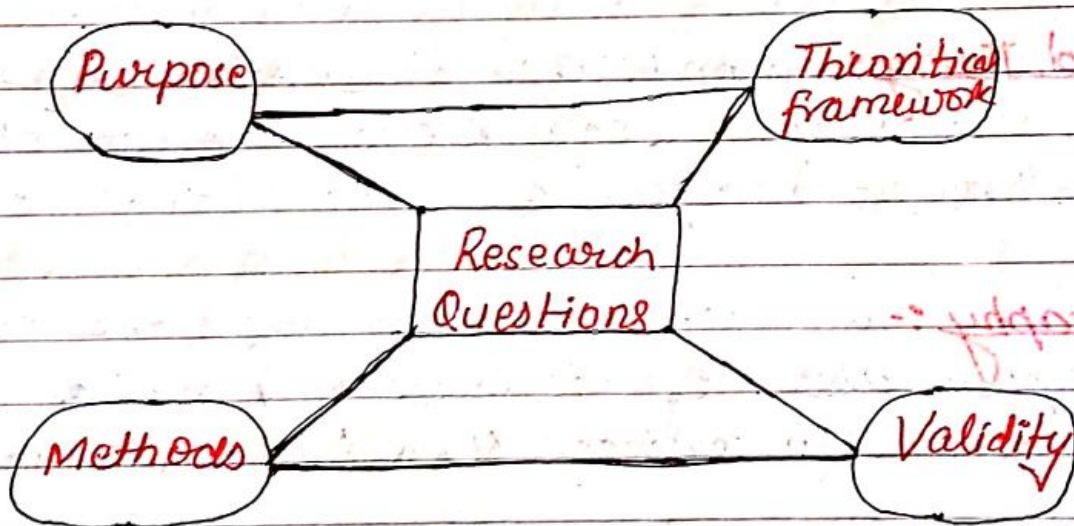


Fig: Model of Qualitative Research Design

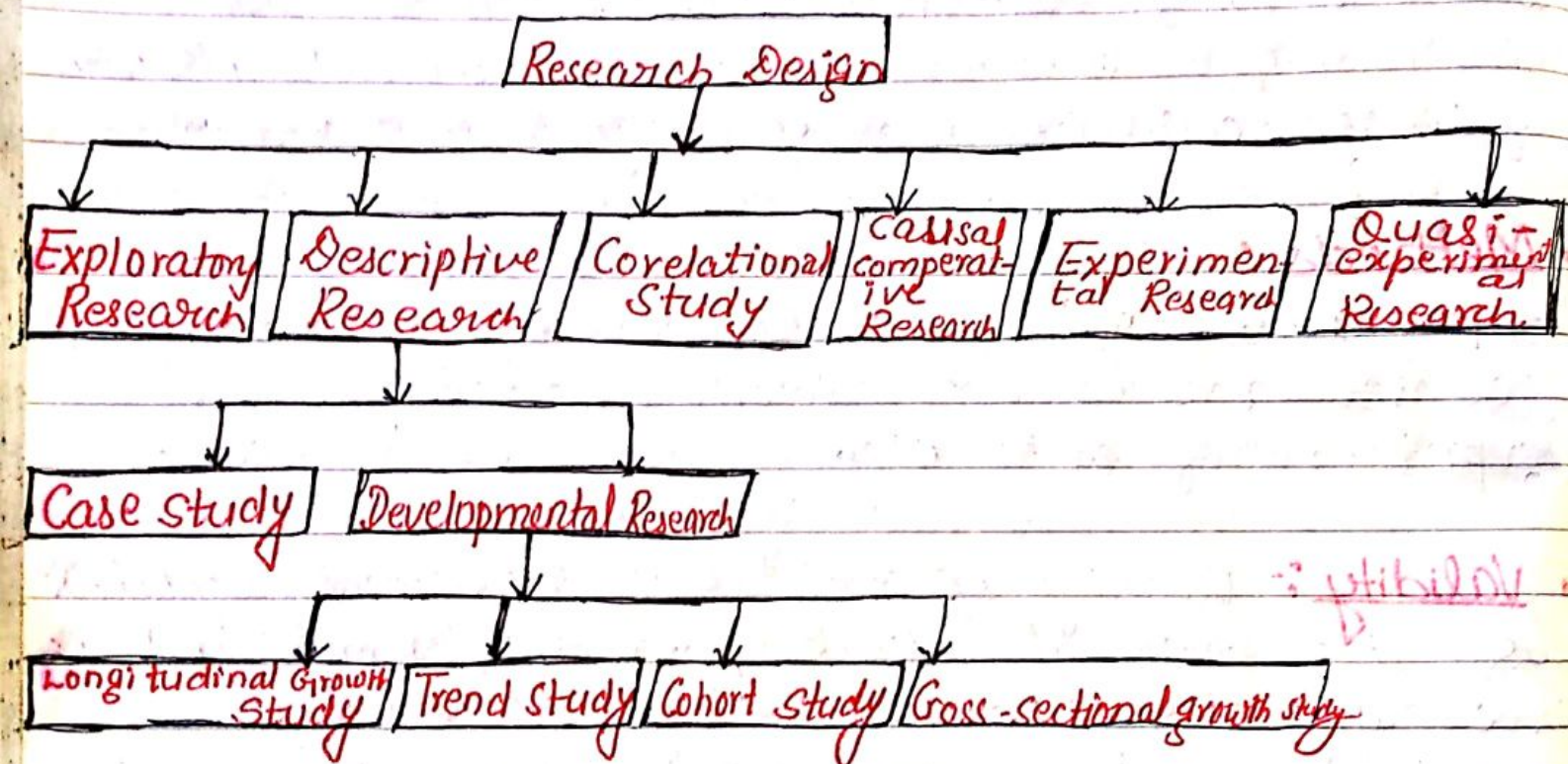
- Purposes :- The purpose actually deals with the real intentions of performing qualitative research and its effects. In other words, it answers the ultimate goals of study, issue of study, its effects, influences and practised etc.
- Theoretical framework :- The theoretical framework is very important that actually answers the ^{what} findings, theories

we have obtained? and also explains about the personal experiences that can be given by an individual through his/her personal experience.

- Research Question :- Research question helps to explain about the things that researcher wants to understand through his/her study, relation of questions with intention of researcher, phenomena of studying or learning etc.
- Methods :- Methods of qualitative research helps to explain about approaches, techniques and processes adopted for collection, analysis and interpretation of data etc.
- Validity :- Validity of qualitative research explains about the potential mistakes, plausible (अनुमानित) alternative explanations, potential conclusions of the study. Similarly it also explain about the your attitude to deal with your study, your methods to relate data with the ^{your} research and so on.

Types of Research Design

→ A research can be only completed only by choosing a correct (appropriate) research design. The research design can be chosen from available researches types. Some are; shown through given figure.



1) Exploratory Research :- A research design that is used to identify problem and analysis of problem in that area where there ^{less} knowledge and information is available is known exploratory research. It is used to explore the ^{initial} knowledge in deep. Exploratory research is useful when researcher lacks a clear idea of information about the situation, problem or topic.

Exploratory research is used for researching a pure (fresh) topic in order to develop concept more clearly.

establish priorities, and operational definition at initial phase. Thus, exploratory helps you:

- * Gaining knowledge about subject matter.
- * Enquiring & interviewing the concerned people.
- * Analysing the qualitative data and preparing ^{research} report.

27 Descriptive Research :- Descriptive research is a process of accumulating facts that studies the subject matter of research in detail and explains the facts and characteristics related to research problem. Descriptive research can be in terms of both qualitative & quantitative data.

Descriptive research classifies the variable related to research problem and analyse them by developing different relationships. Thus, descriptive research helps for:

- * Determine the objective of study & collect the data.
- * Processing and analysing the data.
- * Preparing report ^{by} relating all the facts.

Descriptive research can done through two methods and they are:

1. Case study :- Case study is an important method of descriptive research to understand social science that involves a detail and intensive analysis of any single event or cases or social issue. Case study mainly used qualitative data collection technique through interviews, observation, records, letters, diaries, etc. A case study should be both comprehensive

as well as systematic so that it could investigate a particular issue or problem by relating it with real life content through multiple sources of evidence. Thus, case study helps to

- * Determine topic, objective and completely studies one unit or case.
- * Collection of data from various sources.
- * Arranging, analysing and explaining about each components.

by Developmental Study:- The developmental research design is used to predict the future trends by considering the changes of variables, events, directions, sequences etc over a particular period of time. Developmental ~~change~~^{study} is very important in a research, as it explains about any particular condition ^{or event} that takes place in future.

Thus, developmental study helps for:-

- * Plan formulations
- * Take decisions
- * Implementation of decision.

The developmental study can be undertaken through different methods. Some major are:-

if Longitudinal Growth Study:- Longitudinal Growth Study is a research study where phenomena, people and events are studied at different period of time continuously or repeatedly in order to answer the research questions. This types of studies are done to measure the rate of change in a sample at different stages of developmental phases (time periods).

ii) Trend study:- Trend study are those study where data are collected after a certain time interval that generally predicts the future events and positions. Thus, trend study provides a clear information about net changes at an aggregate level and also develop pattern to detect changes over different period of time.

iii) Cross-sectional growth study:- Cross-sectional growth study is a study where observation of some item of population are done all at once by collecting data over a period of time (days, weeks or months). Cross-sectional describes about change rate by drawing samples from cross-section of society.

iv) Co-hort study:- A cohort study is a component of developmental research that specifically studies the group of people having similar characteristics, experiences within a defined period. For ex: It studies people who born on same day, classmates of same batch, performance of employee who are appointed on same day etc.

Cy Correlational study :- Correlational study is used to study the degree of relationship between two or more variables. Correlation study is done under the assumption that the change in one variable will lead change in another variable too.

There may be three kinds of relations may exist between the given variables and they are:

- * Positive correlation :- when one variable increases, the another ^{variable} also increases.
- * Negative Correlation :- When one variable increases, the another variable decreases.

- * No correlation :- When no any discriminatory correspondence occurs between high & low rank.

This study helps for defining problem, reviewing literature, collection of data and analysis & interpretation of results.

Causal Comparative Research :- The research design that establish causal relationship between variables or shows the cause of problem is known as causal comparative research. The causal comparative research is also known as "Ex post facto" research that means the after the fact research because this research explains about the ~~situation~~ relationship between variables after analysing and studying the situation, problem and events. This research helps for:

- * Defining research problem
- * Formulating hypothesis
- * Preparing assumption list & conceptual design.

Experimental Research :- Experimental research is a research in which researcher restricts (controls) other variables and keeps one or few variables valid (active) ~~to~~ through out the whole research process.

The main aim of this research is to see relationship between variables and formulating hypothesis. It can be done on both the laboratory and work field; where work field has real life situation but laboratory study deals with theoretical components of pure science rather than social science. This research helps for :-

- * Identify & define problem
- * Formulating practical plans
- * Proving result of experimental method

Quasi-Experimental Research :- Quasi-experiment research is almost ^{like} or act as if experimental research but is not the pure experimental research ~~because~~ that occurs when a design doesn't meet randomization and control requirement necessary for controlling the effects of unnecessary variables.

The purpose of research is to approximate the condition of true experiment but in such a way that the allows to validate (use) all the controlled (restricted) variables unlike to pure-experimental research.

Variables

→ Simply, variable is a symbol of an event, act, characteristics, trait or attributes that can be measured and assigned categorical value.

✳ In other words, any measurable signal, figure or symbols which represent the quality or character of an object, event is called variables.

Different scholars defines variable in their own words; some of them are:

F.N. Kerlinger "A variable is a symbol to which the numerals or value are assigned."

P.V. Young "A variable is any quantity or characteristics which may poses different numerical values."

Thus, we can conclude that variables are the character or trait of any component for which value is assigned.

Types of Variable

→ There are many types of variables however the major variables are categorized into four category. These are:-

i) Independent variable:- A variable is said to be an independent variable if it is not influenced by other variables. In other words, independent variables are those variables which is not influenced by change in other variable but influences the dependent variable in positive or negative way.

Thus, independent variable is used as the basis of prediction to predict the dependent variables and describe the measure of factor that causes the influence. For ex:- Increase in advertisement increases the sales where advertisement expense is independent variable that leads change by increase in sales (dependent variable).

ii) Dependent variable:- A variable is said to be dependent variable if its value depends upon other variable. In other words, the variables that are affected by the change in independent variable are known as dependent variable.

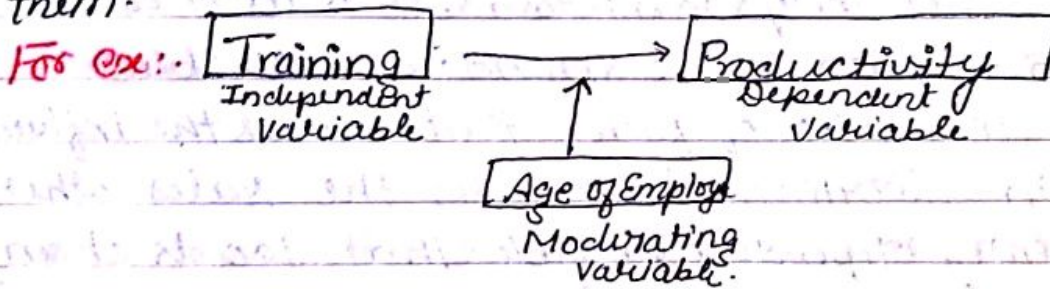
The dependent variables are the primary interest (choice) of researchers and their whole aim is to explain the variability (difference) in dependent variable. The dependent variable also works as solution finding component for the research problems.

For ex:- Sales increases due to introduction of new technology where sales is dependent which changes with introduction of new technology (independent variable).

iii) Moderating Variables :- A moderating variable is defined as one variable that has strong and continuous effect on dependent and independent variable's relationship.

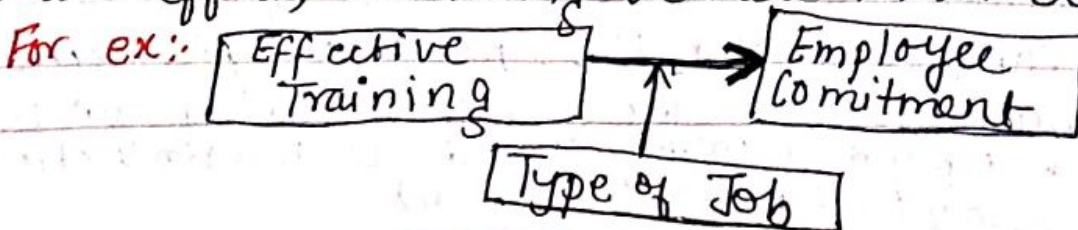
Moderating variable plays an important role in research as it modifies the originally expected relationship between the independent and dependent variable.

Moderating variable is also known as middle variable that generally shows the relationship between dependent & independent variable by occurring on middle of them.



iv) Intervening Variable :- An intervening variable are those variable that influences the nature and the degree of relationship between independent and dependent variable.

Intervening variables works as the function of independent variable operating in a situation that helps to explain the effect of independent variable on the dependent variable. Thus, to give a true picture of cause and effect, intervening variable must be considered.



Measurement

→ Simply, measurement refers to the process of comparing and assigning value to an unknown quantity with known quantity.

In research, measurement is the process of assigning number or any other identificational characters to any problem, issue or topic as per certain pre-specified rule.

In research, measurement plays an important role because it assigns number to issues, problems or topic which facilitates the statistical analysis of data and communication of measured result (outcome).

Different scholars define measurement in research as:

Goode & Hatt "Measurement is the method of converting series of qualitative fact into quantitative data or series"

S. Stevens "Measurement is the equipment of providing numbers to objects or events according to rule."

Thus, measurement is a important component of research that makes a research complete.

Scaling / Scale

→ Scaling is a tool by which an individual distinguishes his/her study on the basis of variables of interest. And scaling is the process of creating continuous values for the objects as per the importance of measured characteristics they poses.

The scaling is very important while performing a research activities. The research scaling can be done in two ways:

- i) Identifying a character of any factor and directly placing it on the scale.
- ii) Constructing a questionnaire in such way that individual response force him to place it on scale.

Thus, scaling can be defined as a "procedure for the assignment of numbers to a property of objects in order to differentiate some of the characteristics of numbers to the properties of question."

Attitude Measurement

→ An attitude is defined as a learned pattern to respond in a favourable or unfavourable manner with respect to given object or event.

In other words, a reaction made by a person over any event, product or any other things is known as attitude. Attitude of humans comes from his/her culture, behaviour and experience.

Many of social science researcher tries to measure the attitude to gain an understanding about reasons that why people behave the way they do, and this process is called attitude measurement. The attitude is measured by attitude scale which helps to convert the qualitative facts into quantitative figure.

The scale for measuring the attitude can be done by following three basic approaches/steps.

- * Select a scale that has been previously developed & tested.
- * Develop another scale either by modifying the existing scale or introducing a new set.
- * Develop a new valid scale that involves steps like: creating sample, specify domain of construction, collection of data, purify measures, assessing reliability, assessing validity, etc.

Beside this there are certain techniques.

for developing attitude scale. Some of them are:-

i) Choice :- It refers to the process of selecting a preferred alternative from two or more alternative according to convenience of respondent.

ii) Ranking :- It is a process where the respondent is given (offered) various alternatives and asked to rank as per their priority. It helps to know about their attitudes.

iii) Rating :- It asks the respondent to estimate the magnitude of a quality/character that a product or event possesses.

iv) Sorting :- Several concepts are offered to respondent and asked them to arrange the concepts according to their priority. The sorting reflects their attitude.

Construction of scale

→ As we know, attitudes varies from person to person and it may be of ~~large~~^{many} types. In order to address all of them, various scales can be used. Some of important of attitude scales are given below:

ay Arbitrary scale :- Arbitrary scales are those scales which are introduced by researchers when they feels that the subject of study is absolutely new and the new method or technique is essential for the measurement of ^{such subject or} attitude.

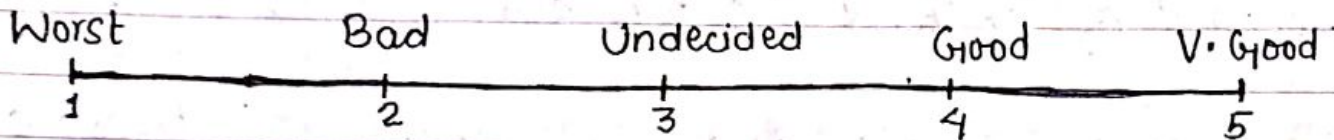
This scale is developed for social science researches which differs with the pace of time. However the researchers must be able to show the reliability and validity of such scales.

by Summated rating/Likert scale :- This scale of attitude measurement was propounded by Rensis Likert. This scale is a self reported technique for attitude measurement which requires the respondent to indicate the degree of his/her agreement or disagreement with each of statements.

This scale is also known as five point ^{value} scale, where each of respondent are provided five points along with their values to show their degree of agreement or disagreement.

The Likert scale is also known as summated rating scale because attitudes of respondent are measured by adding the values provided to each statements.

For ex: Scale to know performance of a student from teacher



All the teachers are asked to give their ~~view~~ ^{view} in given five points ~~of~~ and the points of all their views are added together and if the average value of their ~~point~~ ^{views} is less than 3 then student is dull and if it is more than 3, the student is really bright.

Procedure to construct Likert (summated rating) scales

- * Researcher collects a large number of statements which are ^{probably,} relevant to the attitudes of respondents.
- * A prior test is made by asking for response to a small group of people.
- * Each of the statements are scored from lowest to highest value.
- * Total score of each respondent for every statement is obtained.
- * The statement having highest discriminatory power is identified.
- * Only those statements that correlate with total test are included in final instrument.

c) Differential/Thurstone Scale

→ This scale was propounded by L.L. Thurstone. According to scale, the items should be selected by a panel of judge who evaluates the items in terms of relevancy to topic area and unambiguous in implication.

Under this technique, any two value of two statements are chosen and their average is calculated that denotes rank of those two selected item ~~that~~ which ultimately helps for attitude measurement of respondent.

For ex: If we have four statement related to student's performance, then, statement

	<u>scale value</u>
1. The student's performance is satisfactory	7.5
2. Student cannot score a good marks	6.3
3. Student is good according to his level	4.9
4. Student performance is excellent	7.2

here, If respondent choose statement number two and four then value is calculated as: $\text{Average value} = \frac{6.3 + 7.2}{2} = 6.75$ and repeating the same process of ranking, the researcher draws conclusion.

Procedure to construct Thurstone scale

- * Large number of statements are collected to express various views
- * Scale value of statement is computed as median position
- * Items which are marked as disagreement by judges are discarded
- * The scale value of statement are computed as median position to which it assigned by group of judges.
- * The final list of statement is put into questionnaire form and asked to respondent.

dy Cumulative / Guttman scale

→ The cumulative scale is also known as Guttman's scalogram analysis. The Guttman's scalogram analysis tries to determine the unidimensionality of a scale by gathering many series of statements and asking the respondents to give their agreement or disagreement.

The Guttman's scale is rarely used scale as it is very difficult to create it and also it not so accurate.

Under this scale, respondent need to consider and show his/her agreement ^{or disagreement} to all the statement. For ex:

Respondent no.	Item numbers					Total scores of respondents
	1	2	3	4	5	
1.	✓	✓	✓	✓	✓	5
2.	✓	X	✓	✓	X	3
3.	✓	✓	✓	✓	X	4
4.	X	X	X	✓	✓	2

This shows that first respondent liked all statement and he/she is agreed with it, second respondent is agreed with only three statements and so on as given in table.

Construction procedure of Guttman's scale.

- * Selecting statement clearly on the basis of issues.
- * Pre-test of statements.
- * Removing the statements having 80% of agreement or disagreement.
- * Arranging statements according to their importance.
- * Removing responses which were not clearly favourable or unfavourable.
- * Calculate coefficient of reproducibility, i.e.
 - i) Determining numbers of errors
 - ii) Reproducibility = $1 - \frac{\text{Sum. of errors}}{\text{no. of responses}}$
 - iii) If reproducibility ≤ 90 , then it is unidimensional.

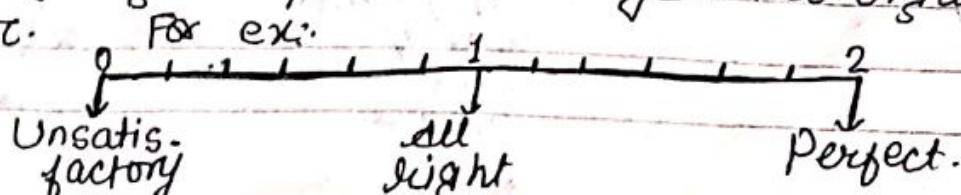
Scale and Techniques used in Business Research

→ As the business ^{research} is an important task, which is full of complexity, and involves a lot of people having various attitudes and to measure those attitude there are many types of scales and techniques are developed. Some of them are;

i) Likert Scale :- It is the most widely used scale for business research, where the respondent are asked to show their degree of agreement or disagreement on provided statement of questionnaire.

This scale strongly shows the agreement. Or, ~~disagreement~~ mostly in five point; so this scale is also known as five point value scale. This scale helps the respondent to show their agreement or disagreement in given five points i.e. a) Highly disagreed, b) Disagreed, c) Undecided, d) Agreed, e) Highly agreed.

ii) Graphic Rating scale :- Graphing rating scale is also almost like the likert scale as, in this scale also the respondent is given three option within a graph to show his/her agreement or disagreement. It is an important scale for business research that helps the analyst to judge a product, analyse the organizational culture etc.



iii) Itemized rating scale :- The another scale used in business research is itemized rating scale where the respondent is provided a category of responses (answers) ~~where~~ and the respondent needs to select a best response relevant to question.

This scale is very popular and widely accepted scale as it is very flexible and adaptable in almost every situation.

For ex: How is HR policy of Delta Organization

Responses:- a. Extremely poor c. Not at all
b. All right d. Perfect

iv) Rank order rating scale :- The another scale used in business research is rank order rating scale. This scale is useful to know the respondent's priority or preferences. Under this scale, the respondent are asked to rank the given product or item according to their priority.

It is a comparative method of attitude measurement where the respondent compares the benefits, ~~the~~ qualities and other traits (aspects) and rank accordingly. For ex: A customer asked to rank given soap according to his/her priority:- Lux, Liril, Camy, Imperial and Godrej then

<u>Soaps</u>	<u>Ranks</u>
Imperial	1st
Camy	2nd
Lux	3rd
Godrej	4th
Liril	5th

iv. Semantic differential scale :- Semantic differential scale was developed by Osgood & Suci in 1957. The semantic differential scale is popularly known as seven point rating scale under which the respondent is asked to rate their opinion between two ^{contradictory} points of a linear scale.

In other words, the scale is bi-polar scale having two just opposite options at each end of the linear scale. It asks to give opinion to respondents between two options where one is positive and other is negative.

For ex:- How ^{an} organization treats its employees?

Harshly | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Softly

v. Other simple scales :- There are several simple scales which are used in business research practices. Some of them are:

a. Simple category questions :- A simple category question are the scale where the respondent need to give his/her opinion within two mutually exclusive (contradictory) options such as:- Yes/No, Agree/disagree etc.

For ex:- Do you like the new biscuits? Response: **Yes** **No**

b. Multiple choices question :- Multiple choice questions are those attitude measuring scale where respondent is offered multiple choices and asked to choose a best one. For ex:- which fast food you like? Response:- Pizza, Burger, Pastery, Momos, Nuggets.

c. Open-ended questions :- Open ended question is a attitude measuring technique where no options are provided but the respondents give his/her view in a descriptive way by expressing about qualities

Validity of measurement

→ Simply, validity refers to degree / extent that actually tries to determine the rationality of measuring tool.

In other words, validity refers to the ability of a measuring tools (scales) to measure its accuracy [what it intended to measure].

For ex.: If the researcher uses any tools or technique to collect and analyse the data and that tools or technique are able to collect and analyse the data according to requirement of researcher, then the used tools or technique is considered as valid.

Different scholars defines the validity in their own way. Some of them are:

Joppe (2000): "Validity refers to the truthfulness of findings that determines when the research truly measures what it intended to measure."

Goode and Hatt: "A scale possesses is validity when it actually measures what it claims to measure?"

Thus, from these definitions, we can somehow confirm that validity of an instrument depends on the instrument's ability to measure what was expected.

An instrument or the tool that is used for the collection or analysis of data ~~must~~ is said to be valid if it satisfies the given three criterial, which are also known as classifications of validity.

a) Content Validity :- Content validity is totally concerned with the adequate (most) coverage of concept that would represent all facets of concept. In other words, content validity ensures that ^{whether} the measuring tool include all the representative set of item and covers the concept adequately or not. Content validity is most popular in applied research ~~that~~ ^{that} ~~validity~~ measures the qualitative components which are basically judgemental in nature. However, the judgement may be logical or personal.

b) Construct Validity :- Construct validity is an internal validity that tries to obtain more knowledge about a work, or concept than ^{just from} ~~the~~ measuring the instrument.

The construct validity tries to make agreement between theoretical concept and specified measuring instrument. The construct validity also can be categorized into two sub-categories. * Convergent validity → It is the validity that creates agreement between the ^(ratings/opinions) ~~agreements~~ gathered from two mechanisms. It is the validity that occurs when scores obtained by two different instruments measuring same concept are highly correlated.

* Discriminate Validity :→ This validity is just contradictory to convergent validity, where there is lack of relationship between two different measures. This validity occurs when scores obtained by two different mechanisms are uncorrelated.

* Criterion-Related Validity :- Criterion-validity is one that is used to show the accuracy of measure ^{or procedure} by comparing with another procedure which is valid.

The criterion related validity is used when measure/tools differs according to individuals on the basis on criterion (dependent variable) which is expected to predict. This validity helps to make the correlation between actual and standard work.

The criterion validity must possess the following qualities:

- * Relevance → A criterion validity should be relevant
- * Freedom from biasness → It shouldn't any biasness in the measurement
- * Reliability → Criterion should be reliable and constant
- * Availability → Criterion should specify the available information.

Reliability of measurement

→ Simply, the reliability of measurement refers to the consistency between various measurement in a series. In other words, reliability refers to the act of maintaining stability and consistency in the results when the measurements are used in different samples and situations.

A measurement mechanism/device is said to be ~~correct~~ ^{reliable} if it consistently produce the same result, when it is applied on different sample or situation taken from same population.

Similarly, any measurement must have ~~three~~ major qualities to be reliable i.e. stability in result even when a measurement is applied on different sample ~~and~~, equivalence in result developed by same researcher by observing many samples/situations and internal consistency because of higher correlation from the responses obtained from similar correlation.

The reliability of measurement can be checked through following methods.

a. Test-retest method :- Under this test-retest method, the same test is given to same people after a period of time by using same instrument to measure their attitude. This technique can be applied on both qualitative & quantitative research and its relationship even can be checked by using correlation.

b) Alternative or parallel form method :- In this alternative or parallel method, the researcher developed two measuring tools to test same people in such a way that the system of measuring wouldn't differ in any manner. The results obtained after the measurement are compared and correlated and if there is high correlation between the answers then the tool is said as reliable.

c) Split-half method :- It is the simplest type of internal comparison which is obtained by calculating the correlations between two halves of an instrument. Under this method, instrument is divided into two halves on the basis of odd or even numbers or on random sampling basis and the result of both halves are correlated to each other and if the relationship is highly correlated then its reliable.

d) Inter-rater method :- Under this method, it is checked that the judgement done by various respondent on a single question ^{through an instrument} is consistent or not. If the several respondent respond (rate) in similar manner then instrument is considered as the reliable one. It is suitable for unstructured data which are to be subjectively interpreted.

Sampling

→ Very simply, Sampling is the simple process of selecting the sample for the research activities according to the requirements; where the Sample is the collection of item or elements from a population or mass unit.

In other words, sampling is a prerequisite of any research program which simply denotes the process of choosing an appropriate elements from collected sample of a particular object or species.

Different scholars and practitioners defines in their own way as:

Cooper and Schindler, "Sampling is some elements of population which helps to draw conclusion from the entire population."

Uma Sekaran, "Sampling is the process of selecting the sub-sets of population through which the researcher would be able to draw conclusion."

The different definitions of every scholars sounds different but ^{advers} a single conclusion that sampling is the process of selecting sample from large groups.

Types of sampling

→ While talking about types of sampling, we can find a number of samplings. However all of these samplings are categorized under two major types and they are:

1. Sampling from probability / Probability Sampling.

→ A sampling technique is said to be probability sampling where each and every component or sample has equal chances of being selected. It is a blind (unknown) sampling where the researcher even cannot guess (estimate) that which of the elements/samples will be selected.

There are several other techniques for probability sample and some are

a. Simple random sampling:- Simple random sampling is a purest form of sampling where each and every element of population has equal chances for being selected. Under this technique samples are selected using lotter or number order methods. This technique is applied when the researcher wants to generalize the findings of researcher.

b. Systematic sampling:- A sampling is said to be the systematic sampling when items of population can be ordered ^{systematically} in some pattern according to character of population. The systematic sampling uses

the given formula to select the samples - i.e.

$$\text{Sampling interval (K)} = \frac{\text{Size of population (N)}}{\text{Size of sample (n)}}$$

It is most applicable method where the researcher chooses a number between 1 and total population size (N) to find the first number.

c. Stratified sampling :- Stratified sampling is a technique of sampling which tries to include two mutually exclusive (opposite) elements of population.

Much clearly, stratified sampling is applicable when researcher seeks to include two different sections of population such as:- male and female, literate and illiterate, employed and unemployed etc. It is used in research because it increases the statistical efficiency of sample as it divides the population into strata (sub groups) proportionately.

d. Cluster sampling :- Cluster sampling is another probability sampling under which samples are chosen by making the clusters of some heterogeneous ^(same) elements.

Much clearly, whenever the population size is too large, the cluster sampling is applied where the researcher chooses samples from cluster of elements such as:- cluster of schools, industries, branches etc. After selecting the samples through cluster method; the researcher need to have a deep study on selected cluster as collection of data is much easier in this technique.

2.7 ~~Non~~-sampling from non-probability/Non-probability Sampling

→ ~~Non~~-sampling technique is said to be non-probability sampling where elements are non-selected by chance but selected by person decision or judgment. It is pre-planned sampling technique where samples are selected according to wish and convenience of researchers. However, there is higher chance of biasness (discrimination) in selecting samples.

There are several other techniques for non-probability sampling. Some are:-

a.7 Purposive or judgmental Sampling:- A sampling technique is said to be judgmental sampling in which the samples are selected on the basis of judgement of researcher.

This method is generally applied by experts to get specific and specialized information that is focused towards the target/purpose of a particular group.

b.7 Quota sampling:- A sampling technique is said to be the quota sampling, if the samples are collected from those populations, which are divided into different groups according to their nature, characters and problems.

It is most commonly applied technique, which studies the character of separated heterogeneous groups who are categorized on the basis of their level, caste, occupation etc.

c) Convenience sampling : Convenience sampling is the sampling technique, where the units are selected as sample according to his/her convenience. This technique is applied where there is a shortage of both the time and resource for researcher; and this researcher is also known as accidental sampling because the samples can be collected from anywhere according to the convenience of the researcher.

d) Self-selecting samples : Self-selecting sampling is a media-based sampling where the researcher asks questions/gives information to respondents through media and the respondent's response (reply) through the same media pattern. This method is a less reliable and valid method which is mainly used to gain basic information, feedbacks and responses (views).

e) Snow ball sampling : Snowball sampling is a reference sampling which is mainly used at that situation when the population is infinite or unfixed or not according to the desires of the researcher.

Much clearly, if the ^{Population size} sample is too large, then the researcher chooses some or one elements/person/object of that sample and characterizes the whole population by relying on the reference of previously chosen element/object/person.

*Sampling Errors

→ A error is said to be sampling error that occurs when samples from population are chosen rather than choosing whole population.

Sampling error is one of the most important reason for difference between an estimate and the true result.

The sampling errors takes place in given forms:

a) Population specification error :- Population specification error are those error that occurs when the researcher doesn't surveys the right population group. For ex:- if we make research on industrial sector then we can't go to survey the service sector's personnels (members).

b) Sample frame error :- This is one of sampling error that occurs when a wrong sub-population is used to select a sample. For ex:- we use internet as sample frame to conduct research with those people who don't use internet then sample frame is wrong.

c) Selection error :- Selecting is another sampling error that occurs when ^{only} the interested respondents are ready to participate in research group. This errors can be minimized by increasing the coverage of participants.

d) Non-response error :- Non-response error occurs when respondents are exchanged due to different reasons such as: they mayn't be informed, they may refuse to respond, etc.

e) Error in taking samples :- This error occurs because of variation (differences) in number of representativeness of sample that responds. It is controllable by applying different measures such as: proper sample design, large sample.

Method of Minimizing Sampling Errors

→ It is a clear concept that sampling errors occurs while conducting research activities. However they can be controlled through different measures. Such as:-

a) Increase sample size :- Most of sampling errors occurs due to small (tiny) sample size. So, a researcher must increase the sample size to minimize the errors and to get more informations.

b) Unbiased sampling :- The another way to decrease the sampling errors is to select the samples without any biasness (discrimination) and conveniency (comfort) considerations.

c) Clear questionnaire :- The another technique to minimize the sampling error is by preparing a clear, complex less and ambiguous free questionnaire.

d. Appropriate sampling design :- To minimize the sampling errors, a researcher needs to design an appropriate and proper sampling design through pre-plan of sampling.

e. Cross check :- The another most effective way to reduce the sampling error is by cross checking on each steps of research activities.

* Non-Sampling Errors

→ Non-sampling errors are the external errors that occurs other sources than the selection of sample.

Non-sampling errors can occur because of many reasons such as wrong question selection, processing and analysing mistakes etc.

The non-sampling errors can occur in different forms such as:-

a) Poor sampling error design :- This errors occur when the researcher doesn't make any ^{about sample design} plan, prior (before) selecting the samples. This error affect on actual output.

b) Over and under coverage :- This error occurs when research either collect more samples or less samples than the actual requirement of research.

c) Misinterpretation of question :- This error occurs when the respondent misinterpretate the question due to use of complex and ambiguous words and sentences.

d) Processing Error :- This error occurs due to improper processing system such as error in coding, editing, decoding and analysing data.

e) Respondent related errors :- These errors occur ~~when~~ ^{due} to respondent's fault i.e. when respondent refuse to response, lacks proper knowledge, unknown about responding technique.

1) Measuring Error :- It is the another error that occurs due to weaknesses in measuring system such as unclear understanding, un-prepared for response, not planning before sampling process etc.

Methods to minimize the Non-sampling Error

→ As we know research is a complex task that has a lot of errors which might be external too. However, some ways to resolve or to minimize these errors are described below.

a) Checking sampling process :- One of the best way to reduce the non-sampling errors is by checking the elements of population along with its steps and processes.

b) Pilot survey :- The another way to minimize non-sampling error is by conducting pilot survey that helps to get feedback and improve questionnaire.

c) Fix procedure :- We can minimize the non-sampling error by developing a fixed/constant procedure for research work.

d) Provide information :- The researcher must provide the informations and experience to the respondent about the related subject matters.

e.g. Use of experts :- Researcher can minimize the non-sampling by taking suggestions and assistance (help) from the professionals and experts.

f.g. Provide training :- The another way to reduce/minimize the non-sampling error is by providing training to respondent about different responding procedures such as:- filling up of questionnaire, method of facing interviews etc.

Project Work

→ Simply, project work is a systematic and organized effort to study and observe a specific situation.

In other words, project work is an organized, systematic investigation of any event or specific situation with an aim to gather and analyse those information that helps the students to know about reality of situation.

The project work is totally systematic as it passes through different types of inquiries, investigations, and field works.

Purposes of Project Work

→ A project is a most important component of research work that some specific purposes. Some of them are:-

a) To provide deep knowledge:- Project work plays an important role in distributing a deep knowledge about subject matter as it involve various processes that helps to get a deep and actual informations.

b) To develop communicational skills:- Project work requires a fieldwork. and in fieldwork, researcher needs to communicate many peoples which helps them to develop & enhance their communicational skills.

c) To provide opportunity to work :- The another purpose of report work ^{to provide opportunity for work. As it is} is a data-based field work which provides the ^{opportunity to} student/researcher ~~for~~ the field work.

d) To promote student centred learning :- Project work also plays an important role in research because it promotes student's thinking, learning and understanding efficiency and skill.

e) To develop data collection and analysis skill :- Project work is a data-based work which requires to collect various datas from many sources and analysis of those collected data. And due to repeatation of this pattern students becomes expert in data collection & analysis.

f) To develop reporting skill :- After the completion of report work the student need to present/report it to superior faculty member. Thus, this activity enhances student's enhancing skill.

Methods of project work

→ Basically, the project work are descriptive and exploratory design, as it informs about every components of the subject matter. However the project work can be done through this method too under the descriptive and exploratory research.

a) Case study method :- Case study is one of mostly accepted method of project ^{work} writing where a specific unit of business event or issue is chosen for study.

In other words, case study is an intensive investigation about any particular subject matter and description of that subject matter that actually examines each and every aspect of that subject matter.

Case study is a deep analysis that requires the data of past, present and future to understand the whole scenario, problems and potential solution. And after analysing these data the report is prepared.

b) Small-scale survey method :- Small-scale survey method is a most commonly used technique in report writing program which is mainly used to know or predict human behaviour.

In other words, it is a

systematic process of gathering information from respondent for the purpose of understanding and predict the features or behaviour of population.

This method is generally adopted by business organizations to understand the ~~and~~ scenario and some different problems. This survey can be done by using telephone interview, mail survey, personal interviews etc.

C) Feasibility study :- The another method used in ~~project~~ writing is through feasibility study. This study is conducted mainly to assess (evaluate) the potentiality of new ideas, event or business.

Feasible study mainly analyses, the ^{Potentiality on basis of} environment of any components such as operational, technical, legal and other environment.

Feasible study is conducted when a company is going to apply a new rule, process or mechanism. Feasibility study is suitable for both organizational or social science studies.

Thus, by understanding the potentiality and analysing the environment, one can write ~~history~~ project work.

Research Proposal

→ In very simple words, a research proposal is a most important document before writing the thesis or report that actually provides the idea about work to be done, procedure of doing work, guessings about results, time limitations etc. In other words, it is the plan of researcher which works as the blueprint for controlling and conducting research work.

The research proposal is a most important document of research work, because clearly states the problems related to the topics, methodologies adopted, time limitation and other aspects as well.

Features

→ Research proposal is a distinct function that has some special functions. Such as:-

a) Proposed activities :- A proposal needs to have proposed activities, ^{through data presentation} that actually determines the basic idea (purpose) of writing research proposal.

b) Stating objectives :- A research proposal must state the objective of research activities along with its requirement in current scenario.

Describe methodology:- A research proposal must describe about the methodologies to be adopted for the collection and analysis of data.

Significance:- A research proposal should be able to show the significance of research work so that it could be easily accepted.

Supporting data:- A proposal should contain some relevant preliminary data which supports the research strongly.

Functions/Purposes of Research Proposal

→ There are number of functions and purposes of any research proposal. Some important are:-

a) Provides information:- A basic function of preparing a research proposal is to inform the research committee about the topic, methods, funding requirements, time allotments etc.

b) Prepare plan:- Research proposal is a pre-plan for research activity that guides the researcher and works as blueprint of research work.

c) Justify requirement:- The another function to

write a research proposal is to justify the proper reason (requirement) of conducting the research, what are needs of this research and its benefits etc.

d) Establishes Contact :- A research proposal works as a key point for establishing contact of researcher with many agencies and institutes such as research committee, funding agencies, universities etc.

e) Informs contents and methodologies :- The another important reason for writing a research proposal is to guide and inform the researcher about the content and methodologies throughout the whole research activity.

Types of research Proposal

→ A research proposal are many types but while talking specifically, there are three major types of research proposal and they are:

a) Solicited proposal :- Solicited proposal are those proposal which are prepared by external experts and researcher as per the request of individual or organization. This proposal mainly concentrates on identification of problems and objectives.

b. Unsolicited proposal :- A proposal is said to be the unsolicited one, if researcher prepares in his/her own interest rather on anyone's request. This proposal has a higher emphasis on problem statement and objectives. This proposal is mainly prepared by the researcher to present in any organization, institute or any concerned field. A unsolicited proposal is also written for presenting innovative ideas, unique concepts etc.

c. Academic Proposal :- The another type of proposal is academic proposal which is mainly prepared to complete any academic degree like masters, M. Phil, Ph. D. etc. Such proposal are mainly prepared by higher level students according to wish of student and requirement of universities. Generally, this proposal contains the elements like: title, objective, background, hypothesis, methodology etc.

Components of Research proposal

→ A proposal is said to be complete when it includes each and every elements; such as:

ay Title:- The first component of research proposal is title of proposal which should be very appropriate and medium sized (no too long, no too short). The title should be able to reflect the whole subject matter of research. For ex:- Marketing strategy of Coca Cola, Technology in Banking Sector.

by Background and History:- The another component of research proposal is background and history of selected title, that helps to introduce the subject matter of title and its past and present condition.

ey Statement of problem:- The third and most important component of research proposal is statement of ~~problem~~ because the whole research process takes place to resolve the problems related to the selected subject matter. Therefore, problem statement should be clear, ambiguous free and well defined.

dy Theoretical Framework:- Theoretical framework clarifies the ways to study selected subject matter by establishing relationship between variables under study. It is prepared on the basis of reference materials.

⑥ Statement of hypothesis :- The another major element of proposal is hypothetical statement which clearly defines the relationship between variable under study. It is used according to wish of researcher and requirement of topic (title)

⑦ Significance of study :- The another most important element of research proposal that the researcher must include is significance of study that clarifies the objective of research and provides methods to solve problem

⑧ Limitation of study :- The another element of research proposal is the limitation of study that generally informs about the restrictions, validity, boundaries and other weaknesses of study.

⑨ Research methodology :- The methodology used in research activity is like the heart of study. It plays a great role in whole research process and clarifies the techniques and procedures adopted by researcher to complete the given research work. It must include; research design, sampling, instruments, data collection strategies and data analysing techniques.

⑩ References :- The final component of research proposal is references that specifies the sources of data which have been used in research work. It includes published & unpublished literatures like: books, journals, thesis, newspaper, internet etc,

Research Report

→ A report is simply a statement or description of things that have already occurred. In other words, research report is a description that is made after completion of research work with specific objectives including procedure and results.

Report are made in order to clarify the findings of research and its procedures.

The report is prepared by students or professional to complete degree and to analyse any business related scenario respectively.

Process of research report

→ Writing a research report involves certain steps, which is denoted as research report. Such steps are:-

a) Logical analysis of subject matter :- The first step of writing a research report is logical analysis of subject matter on the basis of mental connections by associating the subject matters with other many aspects that helps to develop other material for research and analyses the scenario from simple to complex structure.

b) Preparation of final outline :- After analysing the subject matters logically, the researcher needs to prepare final outline which is a framework on the basis of which the whole materials are arranged logically and presented.

c) Preparation of rough draft :- In this stage, researcher discloses each and every information that he/she found during research; such as: procedure adopted by him/her, limitations faced by him/her, techniques used for analysing the data and other findings etc.

d) Editing and Polishing the rough data :- In this step, the researcher firstly tries to find out the weakness of rough report and then he/she checks the point of weakness, consistency of materials, grammar, spelling and if any mistake is found then he/she edits that mistake to improve and reduce mistakes.

e) Final bibliography :- It is the second last step of report writing where the researcher specifies the sources of data that he/she has used in his research. It includes books, articles, theses and so on.

f) Writing final draft :- This is the final step of preparing the research report where researcher finally prepares the report by avoiding abstract terms and jargons in an objective and concise style.

Types of Research Report

→ While counting we can find a number of report types such as: formal & informal, internal & external, short and long etc. However, UNDP has classified the research report in given following groups.

a) Preliminary Report :- The report that is prepared and presented after the collection of data to show interrelationship ^{between variables} is known as preliminary report. Preliminary report is also known as emergency report as it is prepared when preparation of final report takes a long time.

b) General Report :- A research that is prepared after the completion of research work that discloses information about objective of study, procedures and findings of study concisely is known as general report. General report's purpose is only to disclose the basic ~~rep~~ information regarding the report.

c) Technical Report :- A report that is totally focused on the research methodology rather than any other aspect is known as technical report. Technical report is the most important report that everyone looks as it discloses all the report writing processes such as how to do, methods to be adopted, etc.

The technical report can be divided into two sub

types; and they are:-

a) Descriptive Report :- A descriptive report is prepared to explain facts and opinion gathered by researcher during field work. This report shows the findings of researcher in chart, diagram, title and other components in an understandable manner. This report shows the problem faced by researcher while conducting the research and measures to reform it.

b) Analytical Report :- The another form of technical report is analytical report which analyses the data. This report doesn't explain entire situation but it analyses an specific area of problem, and provides suggestions to improve such problems.

Procedures for writing report

→ There is no any exact rule for writing a research report but researcher follow some basic procedures which are described below:

a) Preparation of outline :- A researcher must prepare an outline before starting the writing work because it guides the researcher to manage materials in a proper way.

b) Time planning :- The another basic and important step of report procedure is time planning for each and every work such as: literature review, theoretical framework, data collection & processing etc.

c) Arrangement of Data :- The another component of research procedure is arrangement of data which are collected from various sources in improper and unarranged forms. The data arrangement will help the researcher to analyse it easily.

d) Start of writing :- In this step researcher begins writing report from introduction of topic and proceed up to conclusion. The beginning of writing increases confidence and ~~etc~~ enthusiasm in researcher.

e) Prepare first draft :- It is a very difficult task to write a perfect report on the first attempt, therefore

the researcher at first should prepare a rough sketch of report; that acts (works) as skeleton of report.

f) Put the report for some time :- After completion of first draft, the researcher should leave the report for some day and forget about it; and after some days he/she should review it which help researcher to find the report fresh.

g) Review or rewrite :- It is the final step of research procedure that generally commands to review the report once again, identify the major weaknesses and error and try to improve it by re-writing of report.

Components of Project Report

→ The project report basically can be categorized into three main division or category which are known as components of project report. Those components are given below:-

- i) Preliminary material
 - Title page of project report
 - Certification
 - Acknowledgement
 - Table of content
 - List of tables and figures
 - Executive summary

ii) Body of report

- Introduction
- Literature review and theoretical framework
- Research methods
- Analysis and results
- Discussion and conclusions

iii) Supplementary materials

- References or bibliography
- Appendices.

Body of Project Report

→ Body of a project report includes the whole components of a research along with its pattern that clarifies each and every aspect of project report. Some major components of project report are:-

a) Introduction :- It is the first component of research report that provides information about background of topic and other aspect on the basis of research objective, hypothesis, scope and significance, limitations etc.

b) Literature Review and Theoretical framework :- The component of report's body is literature review and theoretical framework, where literature review is obtained from

various literatures and theoretical framework can be done with the helps of variables ^{used} under study.

c) Research method :- The another part of report's body is obtained through the methodologies used in research. This chapter includes various tools ^{and methods} such as: research design, population and sample, data collection techniques etc.

d) Analysis and Result :- The another component of body of report is obtained through analysis and result findings. The analysis is done statistically through different tests and the result is developed and that result is stated on the given chapter; for further analysis.

e) Discussion, conclusion and implication :-

- Under this section, at first a proper discussion are done on the findings in an independent manner where several argument takes place and after that,
- Conclusion are developed that explains the final result of finding and result of research work & report and after that,
- The research report is implemented as policy in real practice to help other researchers.

Conventions of Academic Writing

→ As a report is tool that is very important for research work, and it is also fully academic in nature which should strict follow given conventions:-

a) Use of Gender-neutral language:- while writing the academic research, the researcher must use gender-neutral (specifying no gender) language such as writer, researcher, data analyst etc.

b) Avoid emotional terms:- The research writer is not supposed to show his/her emotional views in these academic writings like best, greater, excellent, fantastic etc; because use of these terms present the base of biasness in subject matter.

c) Consistency:- A writer must maintain consistency in academic writing, spellings, style etc that helps to develop a specific format and follow the same format through out the whole research writing.

d) Use of non-English terms:- Different non-english terms are occasionally included in academic writings that should be italicized (written in Italics) for ex: guru, hadtal etc.

ex Abbreviations :- While writing any academic writing, a researcher may need to repeat a same word again and again for which he/she could use abbreviations. However, while writing the word for the first time he/she should write it fully.

3) Use of opinion :- When adequate facts are unavailable for the research writing, then the researcher could use the opinions of experts and specialists by disclosing their identity and background.

g) Use of first person :- A research^{er} should always use third person and should eliminate the first person while writing any research. The research must ignore the pronouns like I, my, me, mine, ours etc. and include the terms like researcher, writer etc.

4) Confidentiality :- A research writing should be confidential^{& secret} that means it should not disclose any information related to data collection, sources etc.

Essentials of Good Research Report

→ As a research report is an informative piece of document that should be good enough. There are some essential qualities which makes a report good. Some essentials of good research report are:

a) Free from biasness :- A research report should be free from biasness (that only support a component) and also should be based of pure unbiased and favouritised data.

b) Simple language :- A good report must be written in simple and understandable language by avoiding harsh, vague, unclear and jargon words.

c) Clarity :- A research report is said to be good if it is clear i.e. arrangement of data in a proper sequence, define the data sources and references, state findings and ultimately provides conclusions & recommendations.

d) Grammatical accuracy :- To be good for any research report, it should be grammatically correct and accurate.

e) Conciseness :- A good report should be concise (short) which means, it should express all the required elements.

of report shortly but in an informative manner by avoiding unwanted details and informations.

f) Reader-oriented :- A good research report should be reader-oriented that means the report should be designed in such a way that the reader could easily read and understand it.

g) Relevancy :- A good report must be relevant that have the ability to propound (develop) a conclusion and lead the reader as well.

h) Purposive :- The another essential component of a good report is precision or purposiveness ^{which} ~~that~~ actually means that, all the informations, investigation, recommendations, and other research activities should be directed towards a certain purpose.

Documenting Sources

→ Documenting sources simply refers to the style ^{or design} of arranging/developing and disclosing the sources of data used in any research work. However there are a lots of methods/styles of documenting ^{the} sources. Some of them are explained below briefly.

a) Uses of Quotations :- One of the most popular way of documenting sources is by using the quotations written or said by any expert or specialist related to that subject matter. It ~~may~~ ^{can} be used in two sub way i.e. i) Short quotation and ii) Long quotation.

For ex: F.W Taylor (1900) defined that scientific management "takes care of both the employee and employer in a equitable manner".

b) Use of Ellipses :- Whenever researcher finds quotations to be longer then he/she can use ellipses for documenting sources where the researcher omit (erase) unnecessary part of quotation and use the necessary parts by putting three dots (...) before starting

c) Indirect Quotation :- The another way of ^{documenting} source is use of indirect quotation/paraphrasing where the researcher ~~does~~ uses the summary of any quotation but not the quotation as it is.

d) Footnotes :- The another style for documenting source ~~is~~ use of footnotes that used to clarify the information written in main text with superscript num_{etc}.

e) Abbreviations :- The use of abbreviations are used in report to denote any frequently repeated term or word. etc; that makes reader easy.

* APA Citations & Referencing

→ Citation is a style of managing the information which were obtained from various sources while collecting data. whereas, Referencing is the method (standard) of acknowledging sources of the information that are used in certain resource.

There are lots of methods or ways for the citing and referencing the sources and information such as: Harvard style, Modern society language, and other many more, but among all of these the most suitable and popular in academic sectors of Nepal is American Psychological Association (APA) style of citation and referencing.

* Citation

The citation under APA style is categorized into different types, which are explained as:-

1. Short citation:- Under this method, researcher includes the theories or sayings of others using inverted comma where he/she starts by writing surname of writer, publication data and his/her theory. For ex: Decenzo & Robbins (1968) defines HRM as "practice & policy that involve recruiting, appraising & training".
2. Long citation:- Long citation are generally bigger than short citations that doesn't use inverted comma by leaving some space in a hanging form; starting with surname of writer. For ex: Darwin (1770) said that, the ancestors of human beings were ape or monkey and gradually developed into man.
3. Use of ellipses:- Sometime researcher mayn't require every information from a given theory, therefore he/she uses some important parts only by starting with three dots (...). For ex: "... scientific management provides flexibility & development to the employees".
4. Citation style at numbers of writer:- Citation style differs at different numbers of writers.
 - a) If only a writer, Adhikari (2009) say that...
 - b) If two writers, Bhandari & Neupane (2000) found that "...";
Writer name & date at end of quotation, "Employee commitment is a key component for organizational goal" (Jackson, 1970),
 - c) Use of Anonymus, if writer is unknown, Anonymus, 2008 say that "...";
 - d) If more writers name is to be written then write the surname by separating it from semi-colon. For ex: Theory of Black whole (Hawking, 2009; Underison, 2012; Cooley, 2016)

* Referencing

- Like citation, the referencing under APA method is much preferable in Nepalese academic writing; by considering given statements-
- i) Should be alphabetically managed.
 - ii) First alphabet of first & middle name and surname should be written.
For ex: Pokhrel, M-R (2009)
 - iii) To write first alphabet of first & middle name, capital letter should ^{be} used.
 - iv) Double space should be given between two reference material.
- a) For books : * If there is single writer,
→ Gyawali, H.M. (2006). Micro Economics, Kathmandu, Ekta Publication
- * If there are two writers,
→ Adhikari, R.M & Thomson, F. (2006); Social Science, Kathmandu, ^{Buddha} Publication
- b) For encyclopedia : Sonari (2004). Encyclopedia Britannica
- * c) For brochure and pamphlet : Axis college (2000); Prospectus, ^{Kathm.} and
- d) For unpublished materials : Robin, S. (n.d.) Marketing : A case study.
- e) For internet : Program Available on: <http://www.pu.edu.np> [2008, July 1]
- f) For e-mail : ~~For~~ Nikhilesh, A. (2009). Study in foreign : A suggestion
Available e-mail : Jnmfeduc@heat23.com
- g) For newspaper : The Kathmandu Post (1882, July 2).
- h) Books with later edition : Sekarian, U. (1992). Research method for business (2nd ed); New York; John Willy & Sons Inc.

Data

→ Very simply, data is a fact, information or idea collected through records, observations and measurement.

Data is an informative component that can be in various form such facts, text, numbers, interview, record, photo, video, ~~into~~ statistical and quantitative forms etc.

Data is the first basis and requirement of any research activity and the collection of data should be done very systematically in a designed method so that it would yield a great information.

Types of Data

→ As we already know that data is an informative component that can be in various form and various types. However, some major types of data are described below:

a) Primary data & Secondary data :- One of most important type of data is primary data & secondary data.

The data which has been collected by the researcher himself by going on the spots and sites according to requirement of research work and objective is known as primary data.

Primary data can be collected through

telephone contact, observation, personal queries, interviews, group discussions, questionnaires etc.

Similarly, the data which are collected from the secondary sources (that are un/fresh) is known as secondary data. The secondary data can be collected through ^{published & unpublished} sources like: government reports, publications of NGOs and INGOs, literatures, journals and other related institutes etc.

by Qualitative and quantitative data:- The another type of data is qualitative data and quantitative data.

Any data collected by researcher that represent the qualitative character of fact (element) is known as qualitative data. This data are used in qualitative researches. For ex:- poor, best, educated, male, employed, unemployed, rich etc.

Any data collected by researcher in the form of numbers, quantity or in any measurable form is known as quantitative data. Quantitative data are presentable in different statistical tables, figures, charts and are easily comparable. For ex:- Height, age, growth, profit, loss etc.

Sources of Primary data

→ The data developed by the researcher himself to present the research is known as the primary data and it collected from various sources. Some of major sources of primary data are:

a) Interview :- One of most common sources of primary data is interview where data are collected by asking question orally to respondent and respondent answers the question of interviewer (researcher).

b) Questionnaire :- The another source of primary data is questionnaire which is a formal list of questions that is designed to get response from respondent on a given topic, issue or event. It is a technical sources of primary data which converts the objectives of researcher into questions. Questionnaire is a systematic source which involves certain steps such as: writing questions, arranging questions, etc.

c) Observation :- The another method (source) for the collection of primary data is observation where the researcher analyse, observe, understand and interpret the events by involving personally. It is an important tool for social science research where researcher doesn't ask any questions but observes the scenarios, events and keep the records.

Sources of Secondary data

→ As we know that secondary data are those data which are not collected by researcher himself but obtained from various secondary sources. Some major sources of secondary sources are:

i) Published sources:- One of the most common ^{source} of secondary data is published sources, ^{which} are published by different institutes and organization. Some major published sources of secondary data are:

i) Government reports & publications → Different government bodies such as: planning commission, Nepal Restructuring Bank, foreign & tourist department, police & investigation department etc publish different reports on progress, operation annually for public knowledge which works as the source of ^{secondary} data to researcher.

ii) Publication of semi-governmental organizations → The another published source of secondary data is publications of private sector or semi-governmental sector that generally publish reports for public knowledge as well as international ~~orgs~~ and local promotions. Such organizations are: industrial service centre, Airline companies, Chamber of commerce, reports of NGOs & INGOs etc.

iii) Report & publications of international organizations → Different international organizations like World Bank, International Monetary fund, World Health organization publish different articles & report for public knowledge and re-use purpose which is a best source of secondary data.

b.) Unpublished sources:- Those data, obtained from ^{those} ~~these~~ sources which are not published after completion of work is known as unpublished sources. For ex: reports of private organizations, secret information, records of schools, colleges, hospitals etc.

c.) Computerized database:- The most common source of secondary source in today's world is computer-based database that consist those information which are made available in computer or internet. The computerized database informations are very quick and are of two types i.e. i) Online database - It is net based that contains a huge information on its particular sites related to subject matters such as: google, yahoo etc. ii) Offline database:- It is another computerized source where a certain device contains limited information on any subject matter. for ex: CD-Rom, memory chips etc.

Questionnaire

→ Very simply, a questionnaire is a formal list of questions designed to gather & informations & responses from the respondent on a given topic.

A questionnaire is an important mechanism to collect any data as it translates the objectives of researcher into questions that brings flexibility in research work. Wallace define questionnaire is a gathering information having respondents full answers. A questionnaire helps to collect different types of primary data related to views, intentions, attitudes etc. Similarly, questionnaire is a multi-step process which should be designed very carefully with proper consideration of order, layout, length and appearance. However the questionnaire can be delivered to respondent in many ways such as: through internet, email, personal contact etc.

Principles of Questionnaire

Some basic principles of a questionnaire are described below:

a) Clear and precise :- A questionnaire should be very clear and precise so that the respondent could understand it very easily. A questionnaire could be made clear by using simple and short words & sentences.

b) Unbiased :- A research questionnaire should be free from biasness. It shouldn't use any discriminatory or supporting words from researcher's own view such as: more, less, good etc.

c) Reliable and valid : The instruments used for creating the questionnaire should be fully reliable and valid as such that the expected result should match with the actual one.

d) Length of questionnaire : The length of questionnaire should be very short and well-lengthed ~~that~~ that should avoid the use of unnecessary words because if questionnaire is not well-lengthed then the respondent get confuse and couldn't response according to questions.

e) Use of simple and common language : - The another principle of questionnaire is that it should use very simple and common languages which wouldn't confuse the respondent.

f) Pilot checking of questionnaire : The researcher must check the questionnaire through pilot study before applying it in on real field i.e. by implementing it on a small group.

h) Match the objective : The questionnaire should be designed in such way that the researcher's objective could exactly match with the questionnaire so that he/she could obtain adequate data.

Content of questionnaire

→ The major components of a questionnaire falls into three basic categories; and they are explained below:-

a) Explanation information:- In this component, the researcher provides information regarding the purpose of study, collection requirement of data, and the reason for filling the questionnaire etc. This component explains clearly about the reason of study which helps to remove confusion of respondent and provides him/her to fill up the questionnaire. Generally researcher includes the given things in this part. • Introduction of researcher, • objective of research, • guidelines to fill up questionnaire, • Address to deliver it etc.

b) Main part/Basic information:- It is the main component of a research questionnaire which contains many research questions along with its probable answers. This part of the questionnaire covers all the necessary subjects of investigation adequately.

c) Classification/Personal information:- This part usually covers socio-demographic components. This component usually appears at the end of survey questionnaire that incorporates age, gender, education, family income, religion etc that facilitates to classify the answers of group in some group & study the pattern. For ex.: Academic qualification of respondents [More than masters], [Bachelor cleared], [12 Passed], [SEE cleared]

Types of questionnaire

→ While talking about the types of questionnaire, there are various types of questionnaire. However, all of them are categorized into three major basis.

Type of Questionnaire

Basis of Administration

- Online questionnaire
- Mail (postal) questionnaire
- Delivery & collection questionnaire
- Telephone questionnaire

Basis of Nature

- Open ended questionnaire
- Close ended questionnaire
- Mixed questionnaire
- Pictorial

Basis of Design

- Structured questionnaire
- Unstructured questionnaire

On Basis of Administration

* Online questionnaire :- The on-line questionnaire is an electronic data collection tool which allows the researcher to collect data through internet, websites, or e-mail. It is a systematic way. It is very popular in research field as the researcher collect data through it at a cheap cost, easily without traveling a long distance and very quickly.

* Mail questionnaire :- The another type of questionnaire on administration basis is mail questionnaire where the

directly mails the questions to respondent and the respondent complete the response on those questions and return it to the researcher. It is a very useful method of data collection that ^{when there is} developed and positive relationship between the researcher and respondent.

* Delivery and collection questionnaire :- The another type of questionnaire under administration basis is the delivery and collection questionnaire where the researcher personally distributes the questionnaire to respondent and collect them after some time. It is a most comprehensive method of data collection because the researcher using this method could make a good relation with respondent and can clear his/her doubts and confusions on the spot.

* Telephone questionnaire :- In this 21st century tele-communication is in its peak and under this method questionnaire (questions) are asked and answer from the respondent are received through telephone (mobile phone). This method is too common and popular method of data collections.

On the basis of nature

→ On the basis of nature, the questionnaire is categorized as:

* Open-ended questionnaire :- In this type of questionnaire the respondent is free to express his view & ideas. ^{It is applied for} making intensive studies without any structure for response.

* Close-ended questionnaire :- The another type of questionnaire on nature basis is close-ended questionnaire where the respondent answers are limited to stated alternative but not according to respondent's view. For ex: Yes or No.

* Mixed questionnaire :- It is a combined type of questionnaire having the character of both open-ended questionnaire & close-ended questionnaire.

* Pictorial :- It is a questionnaire where pictures and graphics are used to respond on a question. It is rarely used.

On the basis of Design

→ On the basis of design (schedule) there are two major types of questionnaire.

* Structured Questionnaire :- Structured questionnaire are those which have definite and concrete questions and ~~are~~ are prepared in advance. The structured questions check those data ^{which are} prepared previously. This questionnaire are useful for economic and social science.

* Unstructured Questionnaire :- Unstructured questionnaire are the another questionnaire on design basis that actually acts like a guide to interviewer which is flexible and used to measure personal experience, beliefs etc.

Formats of Questions

→ There are various formats of questionnaire and some of them are:

a) Open format questions: Open format questions are boundless questions on which respondent can respond according to his/her opinion, views and knowledge. It is very useful way of questions which is used to get different views, suggestions etc.

b) Close format questions: It is the format of question where certain limited options are given to the respondent and respondent need to choose one of it according to his/her view and knowledge.

The close ended questions are categorized into following types:-

i) Leading questions → In this questions, the respondent are forced to choose a certain particular answer which almost equal. For ex: How do rate the C.G products.

1. Fine 2. Good 3. Best 4. Excellent 5. Superb.

ii) Important questions → The another type of close ended question is important question where the respondent are asked to rate the importance of particular problem. For ex: Entertainment in life

1. Extremely important 2. Very important 3. Important
4. Not very important 4. Not important.

c) Likert scale questions: This is another type of closed ended question which measures the degree of agreement to a particular statement. For ex: Government stability in Nepal is essential.

1. Strongly agree 2. Agree 3. Undecided 4. Disagree 5. Strongly disagree

d) Dichotomous question: In this question, the respondent is given only ^{contradictory} two options to show his/her opinion. For ex: Do you like tea?

1. Yes ☐ 2. No ☐

e) Bipolar questions: In this questions, the researcher need to respond between two extremely opposite options written in a linear scale. For ex: Internet uses ~~as~~ in 21st century in your view:

- Reliable Unreliable
- Useful Unuseful
- Quick Late

Research Interview

→ Research interview is an important method of collecting data where interviewer and interviewee personally ask the questions and gives answers. A research interview helps the researcher to obtain a view of respondent at a very higher level through a clear conversation.

In this research interview the researcher asks the questions and record it in tape, mobiles or writes it on paper.

Different scholars have their own definition. Among them, one is:

N.H. Gopal "The interview is conversation with a purpose and is more than oral exchange of information."

Character/feature of Research Interview

- There are lots of features and characters of research interview. Some are:
- * Interview is purpose
 - * Conversation between two peoples about a subject/matter
 - * Questions asked in interview should be according to capacity of respondent
 - * Interviewer should listen respondent carefully
 - * Interview is art of motivating respondent for sharing information
 - * Interview should be subject focused.

Principles of Research Interview

→ The whole research interview bases on certain defined principles and among them, some are described below:-

- Bias-free:- Any research interview should be based on equitability principle that means it shouldn't be biased on the basis of cast, sex, ethnicity, political association etc because biasness in interview may produce chances of conflict between researcher and respondent.
- Good Behaviour:- Interviewer must behave very positively towards the respondent by giving a proper respect that make the respondent feel comfortable enough to answer the questions.
- Flexible:- The research interview should be flexible enough that help the respondent to answer in their desired pattern with a perfect definite answer.
- Direction-free:- A research interview should be direction-free that means ^{researcher} shouldn't provide any direction to respondent rather they should collect all the data given by respondent freely without any direction.
- Co-operative:- A research interview should be very much co-operative that means it should help the respondent to make question clear, help him/her to feel comfortable etc.

■ Sincerity:- Interviewer must be very sincere towards each and every aspect of interview such as interviewer, objective and work & its procedure that help him/her to achieve the adequate information.

■ Listening:- An interviewer should be a good listener so that he/she could catch all the informations completely and use in its research works which are spoken (given) by respondent.

Types of Research Interview

→ There are different types of research interview. However some of them are given below:-

i) Personal or face to face interview:- The most common interview in which interviewer talks to the respondent and asks the questions directly is known as personal or face to face interview. Personal interview can be taken on any suitable place where the interviewee and interviewer can meet together. This interview also involves non-verbal communication such as: gesture, facial expression etc.

Some major things to be considered while taking personal interview are:-

- * Cost factor as it is a costlier.
- * Time limit
- * Sense of equality in interview process.
- * Ability of interviewer (respondent) to answer.

ii) Telephone interview:- In today's date, telephone interview is mostly accepted interview method, where the researcher takes the interview of respondent who are widely spreaded by using telephone or mobile. Under this interview the researcher asks structured questions in verbal form.

iii) Computer Assisted Interview (CAI)

→ The interview conducted by using the computer is known as computer assisted interview (CAI). In this method, computer is used to develop various processes of interview such as:- administration of survey questionnaire, arrangement of questions and so on. In this method, the researcher uses laptop to exchange various informations and collect the informations. It was developed 1990 in London.

The CAI is categorized into three sub-types and they are:-

* CAPI :- CAPI stands for (Computer assisted personal interview) where the interviewer read out the questions given in screen for respondent and respondent's ^{answers are} typed in the ~~computer~~ ^{computer} for asked questions.

* CATI :- CATI stands for (Computer assisted telephone interview) where the whole interview continues as like CAPI but by using telephone.

* CASI :- CASI stands for (Computer assisted self interview) which is used when case are sensitive or behaviour related such as crime, attitude, sexual behaviour etc. In this method, the respondent is given a laptop to confess his/her crime or to write the answer asked by police.

iv) Focus Group interview :- It is an interview which is done on a group of people to obtain the information about a certain issue or problem. In this interview, group of people share their knowledge, experience ~~from~~ gained from involvement of that issue.

v) Depth interview :- Depth interviews are designed to find out underlying motive and desires which are hidden. Depth interview requires a great psychological knowledge of researcher to explore hidden motives. In this research, ^{respondent} receives the fixed options to present their views and answers.

Sources of Qualitative Data

→ There are lots of sources of qualitative data and some of them are:

1. Observation: One of the most important source of qualitative data is observation where the researcher observes, analyses and interprets the events or works personally. It is a comprehensive method of data collection where researcher doesn't ask any questions but observes the scenario by involving itself. It is an important method which is mainly used in field of social sciences.

The observation is further categorized into two sub-types i.e.

i. Structured and unstructured observation:- The observation made by defining a certain style and recording the observed things in a systematic manner then it is structured observation.

Similarly, the observation made by researcher without any proper thought and considerations then it is unstructured observation.

ii. Participant and non-participant observation:- The observation in which researcher himself is involved ~~is~~ known as participant observation. Similarly, the observation in which the observer observes the member without informing them from out of the group.

B) Depth Interview :- The another source of qualitative data is depth interview which are designed to find the hidden motives and desires.

The depth interview requires a great skills to find out such motives of respondent because the researcher lacking specialized knowledge, training and experience cannot perform this depth interview.

In this interview, the researcher tries to explore respondent's views, motives and desires by asking prepared questions and recording them.

Some major steps to be followed while conducting depth interview:

- A goal-oriented plan
- Determining respondent and developing guidelines
- Providing introduction ourselves first
- Taking interview, recording data and analysing it.
- Preparing report.

C) Focus Group Interview :- The final source of qualitative data is focus group interview where the interviewer interviews a group of individuals selected and assembled by researcher to comment on their knowledge, experiences and related information about any specific subject matter, issue etc.

A focus group interviews generally discusses about a certain subject matter or issue. and data is obtained by recording that discussion in audio form or visually. The time of 1.5 - 2 hours is used for focused group discussion.

Some major importance or objectives of focus group is:

- * To get detailed information.
- * To get new ideas and techniques.
- * To discuss contemporary issues.
- * To create view or perception on any issue, product.

There are three-sub types of focus-group interviews. They are:

- i) Telephone focus group: This focus group interview is done by using telephone or mobile for the group members who widely spreaded.
- ii) Online focus group discussion: The focus group conducted by using e-mail or websites is known as online focus group discussion.
- iii) Video-conferencing focus group: This focus group discussion is conducted by using both telephone and visual devices are known as video-conferencing focus group.

Getting Data for analysis

→ Researcher generally spend alot of their times to collect the data through various sources and to present those collected data in form of knowledge, they need to analyse it through certain steps:-

i) Questionnaire checking :- This is the first step of getting data ready for analysis where the unacceptable questions are eliminated because of their certain weaknesses such as: incomplete, variance, missing pages etc.

ii) Editing :- Editing is the second process which tries to correct and improves illegible, incomplete, ambiguous answers.

iii) Transcribing :- Transcribing simply is the process of transferring data so as to make it accessible to people or application for further processing.

iv) Coding :- Coding basically assigns the alpha or numeric codes to answers in a correct order to those answers which are uncoded so that the statistical technique can be applied on them.

v) Cleaning :- Cleaning reviews data for consistency as various inconsistencies can arise from wrong logic, unnecessary use of data etc.

v) Statistical adjustment : Statistical adjustments apply to data that requires weighting and scale transformation.

vi) Analysis strategy selection :- Finally selection of data analysis strategy is the research project but is finalized after consideration of the characters of data that has been collected.

Meaning of Data Analysis

→ Data collected by researcher from various sources are needed to be analysed for presenting the final result and the process of gathering, modeling or transforming data with a goal to highlight useful informations, suggestions and conclusions is known as data analysis. - WIKKipedia

In other words, data analysis is the stepwise process consisting organizing, tabulating, performing statistical analysis and drawing conclusions.

Data Processing

→ The processing of data makes the data reliable and valid. The processing of data can be done by using certain definite processes. The process of data processing is given below:-

i) Editing :- Editing is the first step of data processing that mainly checks and corrects the data from questionnaire and interviews to respondent in a systematic way to ensure accuracy and completeness. This step actually ensures the quality of data by eliminating all the errors and confusion points. Editing is done just after completion of data collection.

An editing of data must follow certain criteria. Such as:

- * Completeness :- Data must be totally complete.
- * Consistent :- Data must not be fluctuatory but ^{should be} consistent.
- * Accurate :- Accuracy of responses is mandatory. (compulsory)

ii) Coding :- The another step of data processing is coding which act to assign numbers or other symbols to answers of respondent can be grouped into limited number of category.

The coding is very important for analysis of data because only coding transforms

the ~~un~~ unmanaged data into arranged sequence by providing a certain set of number (numeric value).

Some major things to be considered while coding the data are:-

- Coding should be clear
- Coding should be exhaustive
- Coding should be mutually exclusive (different)
- Coding should be based on classification principle
- Coding should be recorded in record book
- Codes used for every responses should be defined.

iii) Classification:- Simply, classification is the process of dividing data into different categories, classes, groups or heads. Classification is very necessary in research activities because it provides identification to data according to their characters and also facilitates the comparison between classified groups because data collected are not comparable until they are properly categorized. The data can be classified efficiently on different basis such as:-

- Geographical classification
- Chronological classification
- Qualitative classification
- Quantitative classification

iv) Tabulation :- The another process of data analysis is tabulation which is the process of arranging data in systematic manner into two rows and columns.

Tabulation summarizes raw data and displays them in compact form for further analysis and also converts the data into frequency distribution.

Tabulation is very useful because of its certain advantages:-

- a) Helps to make data easily understandable
- b) Facilitates comparison
- c) saves time and energy
- d) Avoids repetition
- e) Converts the whole data into easily rememberable form.

Parts of a Table

→ While tabulating any data, the researcher must include following components; which are known as parts of table. The major parts are:-

a. Number of table :- Each and every table should be numbered for reference in future and for purpose of specification of content. The number of table can be written either just below the table or with title in top.

b. Title of table :- Each and every table must have its title as title helps to determine the table easily and also provides a short description about the contents of table.

c) Column caption :- Column caption refers to the heading of column which must be mentioned at the middle of column.

d) Title of row :- It is the heading of row that gives information about row and it is written on left side of row.

e) Body of table :- It is the main part of table that show each and every component of table and mostly includes numeric facts & figures.

f) Head note :- Head note is an important part of a table that explains all those information related to whole table which are left or are not included in row & column title.

g) Footnote :- Footnotes are the assisting notes which explain the contents of a table, when the terms and figures of a table are not clearly understandable from the title, caption and head notes.

h) Source :- The final part of a table is its source, if it has been made from the secondary data.

Things to be considered while tabulating data

- There are a lots of things that should be really taken care of, while tabulating any data. Some of them are:
- * Proper selection of paper size for tabulating data
 - * Content in a table should arranged clearly, correctly & precisely
 - * Table must be related to objective of research
 - * Table must have its title and a short description ^{of its} content
 - * Use of abbreviation should be avoided
 - * Different letter can ^{be} used ~~be~~ such as: (bold, italics, capital etc).
 - * Ditto copying from else where should be avoided

Summerizing

- After the completion of data till tabulation, the last step of data processing is summerizing the data where researcher present the data in precise form so as to make easier for describing, analyzing and interpreting the data. The data can be summerized through two ways:

A Table: The arrangement and presentation of data in a logical order is known as table where the whole data is arranged between rows and columns.

The table also can be divided

into two sub-types i.e.

i) Simple table :: The table that presents data on single character is known as simple table.

For ex: ^{number} ~~Age~~ of students Expense in month

200	10000
200	5000
50	2500
25	1250
<u>Total</u> 375	<u>18750</u>

ii) Complex table :: A table that presents more than one feature of data is known as complex table. Such tables are more popular because it contains all the informations and useful to very wide range as it contains all the related facts. This table is further categorized into three sub-types:

* Two way table

→ The table that presents the two characteristics of data is known as two way table. It contains two rows showing different characters for ex:

Students Class	no. of students		Total
	Boys	Girls	
1-5	100	80	180
5-10	95	85	180
10-12	85	70	155
More than 12	70	60	130
<u>Total</u>	<u>350</u>	<u>295</u>	<u>645</u>

* Three way table :- A table that presents the three characteristics of the data is known as three way table. This type of table are needed to present three character of data at a time. For ex: Table showing class-wise distribution of salary.

Salary (Rs.)	Male			Female			Total		
	Lower class	Middle class	Upper class	Lower class	Middle class	Upper class	Lower class	Middle class	Upper class
15000	50	30	-	18	2	-	68	32	-
5001-10000	30	13	2	3	1	1	33	14	3
10001-15000	8	20	4	-	2	1	8	22	5
More than 15000	-	-	3	-	-	2	-	-	5
Total	88	63	9	21	5	4	109	68	13

* Manifold table :- The table that shows more than three characteristics of data is known as manifold table. For ex:

Table showing : Numbers of employee, sex, and salary and education

Salary	Male		Female	
	No.	Education	no.	Education
1-5000	200	SEE cleared	200	SEE cleared
5001-10000	350	+2 cleared	350	+2 cleared
10001-15000	400	Graduate	250	Graduate
more than 15000	280	Post graduate	300	Post graduate

Presentation of Data in Graph and charts

→ Graphs and charts are the important tool and way through which researcher presents his/her finding that facilitates a clear understandings and the comparison.

Advantages of Diagram (Chart/ Table)

- Creates deep impression on mind
- Easy to understand and make conclusion
- Saves time and effort of researcher
- Facilitates comparison
- Make data attractive and convincing.

Rules of constructing

i) Title :: Researcher/presentator must mention the title on the above of diagram in a short and complete sentence.

ii) Selection of scale :: There should be proper maintenance of selection of scale that must suit to size of paper because proper scale selection makes a diagram attractive.

iii) Neatness and cleanliness :: Diagram should be neat & clean, so that anyone could easily understand it and interpret it.

- i) Footnote :- Any diagram must contain footnote below to it to justify the table or provide those information which are left.
- ii) Selection of diagram :- The researcher must choose the diagram according to nature of ~~diagram~~ data which is to be presented.
- iii) Simplicity :- Diagram must be very simple and error free so that it could be easily understood by user.
- iv) Index :- Each and every figure must have index having different colours, shades, lines and design that helps the user to indicate and understand the diagram.

Types of Diagram

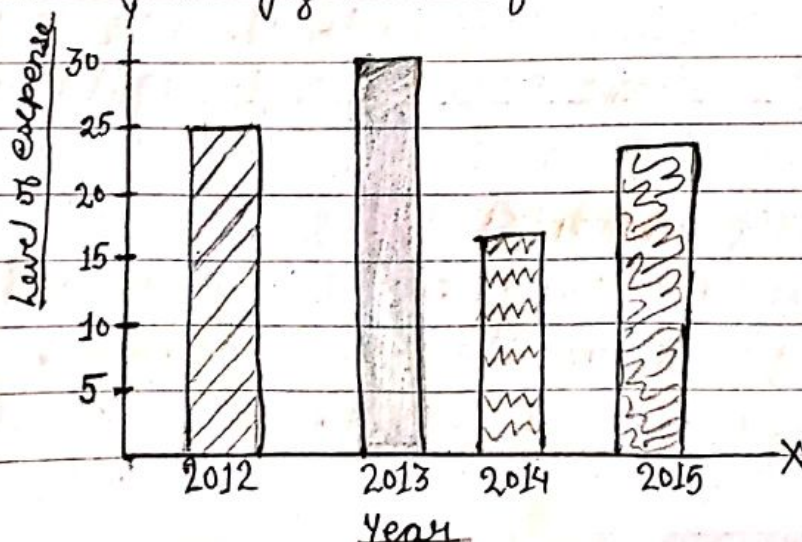
i) Bar Diagram

→ A diagram that presents data preparing bars is known as bar diagram. It is an easiest and most commonly used method to present any kind of data and information.

In this bar diagram data are presented by making different shaped ^{rectangular} bars placed on the gap of equal distance.

There are different types of bar diagrams. Some of them are:-

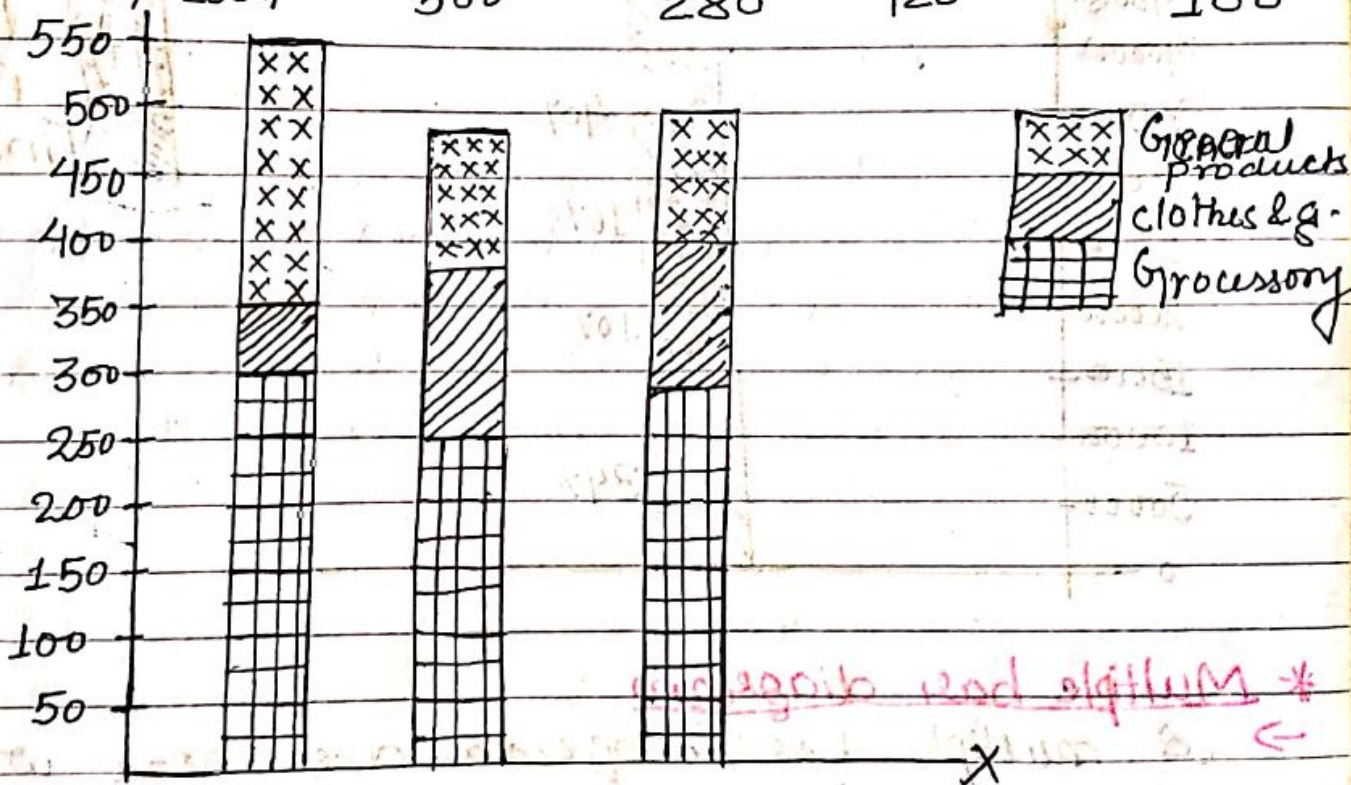
* Simple bar diagram:- The diagram that presents the ^{data of} single variable by making different bars is known as simple bar diagram. It is a simple graphical diagram that usually shows the fluctuations at different point of time through different bars. For ex: Graphical represent of expense of family on different years. The figure of it are given below:-



* Sub-divided bar diagram

→ Sub-divided bar diagram is a diagram that shows the different parts of any activity or subject matter within a single bar along with accurate level. Different dots, shaded parts and colours are used to distinguish different parts of a sub-divided bar diagram. For ex: Shops in market of a metropolitan city.

Year	Total shop	Grossory	clothes & garment	General products
2005	550	300	50	200
2006	480	250	130	100
2007	500	280	120	100



* Percentage bar diagram

→ The another type of diagram is percentage bar diagram which is prepared by considering various dimensions of subject or variable. It is ^{created by} calculating

different percentage of various component for en:-
Percentage diagram of given data. Total fund used by
a person on construction of a building.

Expenditure $\Rightarrow$	Raw material	Wiring	Plumbing	Finishing	Total
Amount $\Rightarrow$	200000	80000	50000	170000	500000

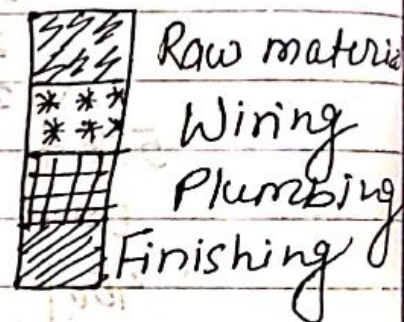
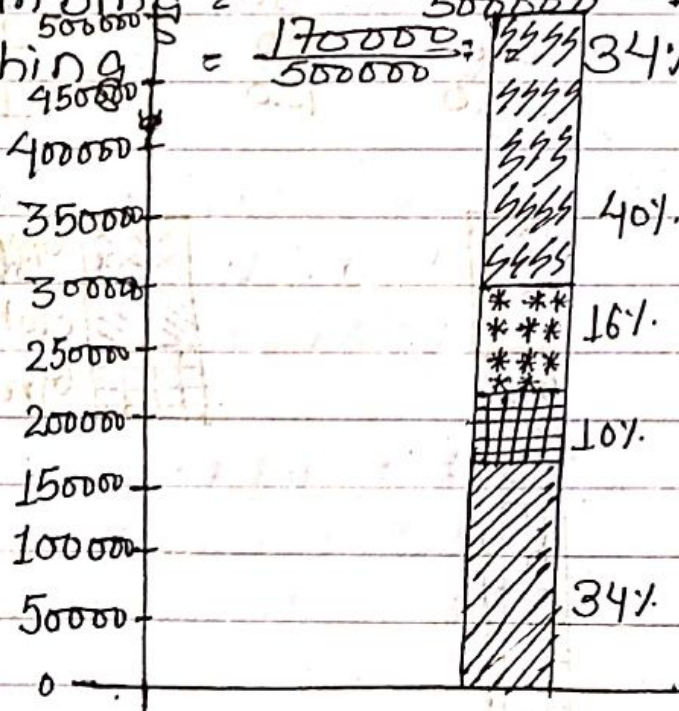
Percent calculation

$$\text{Raw material} = \frac{200000}{500000} = 40\%$$

$$\text{Wiring} = \frac{80000}{500000} = 16\%$$

$$\text{Plumbing} = \frac{50000}{500000} = 10\%$$

$$\text{Finishing} = \frac{170000}{500000} = 34\%$$



* Multiple bar diagram

$\rightarrow$ A multiple bar diagram are those which is prepared to present the data of more than one component within a specific time period. This diagram shows the data various related components.

For ex: Students of a college

Year	Science	Mgmt.	Humanities
2000	120	180	220
2001	200	220	180
2002	250	220	230



Pie-chart

→ A pie chart is another diagrammatic presentation of data in form of degree; where the value of each component is being shown in a circle along with its degree.

For ex!: Expenditure of a person.

Expense	Food	Rent	clothes	Transport	Others	Total
Amt. ⇒	20000	5000	2000	3000	5000	35000

Now,

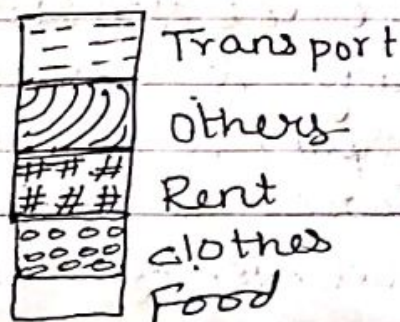
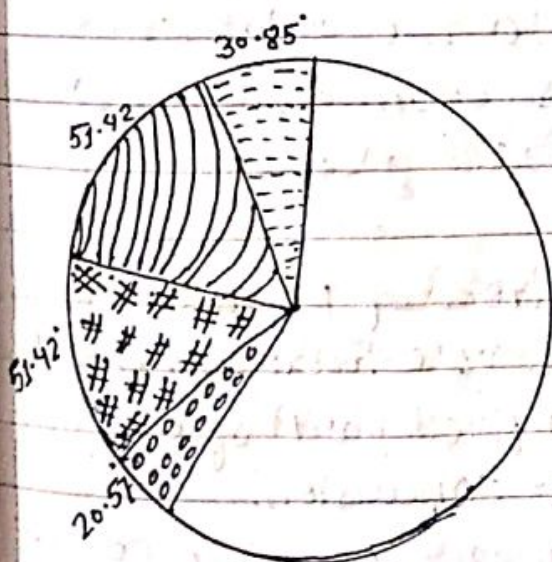
Calculation of degree!: Food = $\frac{20000}{35000} \times 360^\circ = 205.71^\circ$

Rent = $\frac{5000}{35000} \times 360^\circ = 51.42^\circ$

Clothes = $\frac{2000}{35000} \times 360^\circ = 20.57^\circ$

Transport = $\frac{3000}{35000} \times 360^\circ = 30.85^\circ$

Others = $\frac{5000}{35000} \times 360^\circ = 51.42^\circ$



Some Short answers

1 → characteristics of scientific research

- a) Purposive b) Reaplicability
- b) precision d) Objective

2 → Steps in problem formulation

- a) Identifying broad problem area
- b) Divide the subject area into sub-areas
- c) Decide about an area
- d) Define problem
- e) Decide about objectives

3 → Positivism

a) It is philosophy that is derived from natural science

b) The research process starts with identifying casualities.

Interpretivism

It is philosophy that is derived from social science

The research process starts with interest.

4 → Pre-testing of questionnaire refers to the pilot study of questionnaire which means the questionnaire must be checked by applying on a small group of people.

5 → Sample → The representative portion of population, selected for study is known as sample. For ex: group of employees.
Sampling → Sampling is the sub-set (refined part) of population which help the researcher to draw a conclusion.

For ex: Selection of group of manager from total population of employees.

6) The validity and reliability is necessary for research because ~~of~~ validity find the measurement accuracy in research and reliability helps to produce stable and consistent result.

7) The assumptions on which parametric tests are based are:-
* The variable is measured at least in interval ^{scale}.
* The sample size is greater than twenty.
* The sample is drawn from normal probability distribution.

8) Any two examples of referencing a journal articles under APA method are:-

→ Pant, P.R. (1993). Human resource development: A cross-country overview of Asian region. The Nepalese Management Review.

→ The Kathmandu Post (2010, Feb. 10) P. 6.

9) Coding is the process of deciding that how the response are going to be put together in a frame so that they can be entered into computer or manual data sheet.

10) The research which is concerned with the qualitative phenomena and studies the social aspect through a distinct methodology is qualitative research for ex: Research on environment degradation of Nepal.

- 11) Research problem is any situation where a gap exists between the actual and the desired ideal state.
- 12) A theory is an important component of a research which provides conceptual framework for research which is used to plan & direct the line of study.
- 13) A questionnaire is a formal list of questions designed to gather information and responses from the respondent on a given topic.
- 14) The observation in which the researcher himself is involved for collecting data is known as participant observation.
- 15) Theoretical framework is a conceptual model that shows the relationship among the several factors that has been identified as important to problem.
- 16) The different types of validity are:-
 - i) Content validity, ii) Construct validity, iii) Criterion-related validity
- 17) Categorization refers to dividing of data into different categories, classes, group or headings.

18) Process of scientific research refers to works or steps which are to be followed while conducting scientific research through different steps such as: realizing problem, identifying problem, review of literature, hypothesis formulation, research design, collection of data, analysis of data and interpretation of data.

19) Literature means ^{published body of knowledge that} ~~the work~~ you consulted in order to understand and investigate your research problem. Literature review is a systematic analysis of previously available documents to find possible solutions for current problems.

20) Criteria of good research are:-
Testability, power of prediction, similarity, specificity, clarity, and consistency.

21) Significance of research design are:-

- It provides overall plan for activities to be undertaken.
- It is an organized system that guides the researcher.
- It is a blueprint specifying the methods to be adopted.
- It is a strategy of obtaining information.

22) Advantage of observation methods of data collection are:-

- Researcher doesn't have to ask any question & doesn't need to follow any step for obtaining information.
- Researcher can get insight information.
- It helps to get pure/fresh data.
- It is fully scientific & free from any error & biasness.

23)

Reliability

i) It is an act of maintaining consistency & reliability in result when measurement are used in different sample & situation.

ii) It is used to measure the consistency of tool of research.

Validity

Validity refers to the ability of measuring tool to measure its accuracy.

It is used to measure the ability (capacity to produce exactness) of tools.

24) Format of research proposal. [contents]

Title

Background of study

statement of problem

Theoretical framework

Research Design & Analysis

Significance of study

Limitation of study

Finding

References.

25) Scientific research is a systematic & well organised, empirical investigation about any subject matter through preassumed relationship between the variables.

Ans 26) Purposes of literature review:-

- To identify the sources of data that others have used.
- To identify the issues left by previous research.
- To develop alternative research work.

27) Experimental research design is a research design which restricts (controls) all the unnecessary variables by using one or few variables for research process.

28) Meta analysis is a more rigorous alternative to the traditional review.

29) Deductive approach is the research approach where the research works moves from the more general to specific information. It is a top-down research approach.

30) Inductive approach is the research approach where the research works moves from the specific observation to general information. It is a bottom-up research approach.

31) Advantages of literature review:-

- i) Helps to understand the problem clearly.
- ii) Helps to develop & know research design.

32) Functions of hypothesis statements are:-

- Shows the area of emphasis.
- Provide the guidelines for data collection.

Lesson: 1

Start of Kali Yuga

→ The present story is an abstract from the religious book of Hinduism called "Mahabharata" by Devdutta Pattanaik.

The given story shows the beginning and effects of Kaliyuga on every living human of the earth.

The story begins when Yudhisthira conducted the grandest yagna (यज्ञ) in human memory, ^{known as Ashwameetha} where two farmers appeared on middle of yagna and beg with Yudhisthira to settle down their dispute (बैहस/झगडा).

The dispute among them started when one of them sold the land to the other and while ploughing the field; as the ^(new owner) farmer ploughing the field found a pot full of gold and refused to take it ~~the~~ saying that the thing beneath (मुनि) the land still belongs to old owner. At the same time the old owner too refused to accept the gold pot saying that the land is sold to another person and whatever comes out from land ~~is~~ belongs to new owner; and as both don't accepted the gold pot ^{they argued,} and at this point the disputes among them starts.

After listening the story, Yudhisthira was very impressed from the charitable (सहयोगी) nature of both the farmers but at the same time he was confused too, as he has no any idea to settle the case.

In the absence of a single idea, Yudhisthira asked for Krishna's advice. Krishna suggested both the farmers to leave the gold pot with King (Yudhisthira) and return after three months. This advice of Krishna totally surprised Yudhisthira.

As ^{Yudhisthira} ~~Krishna~~ was totally amazed, Krishna said that, after three months you would have your yagna completed and Kali yuga dawn (started) which will be a new age, where these two generous ^(आर्य) ~~and~~ and compassionate ^(दयालु) farmers will be totally changed. They will fight furiously for the same gold pot which they had handed over to Yudhisthira. Krishna also added that, in coming new era of Kali yuga nothing will be as it was, because only one fourth of civilization will survive where man will live for pleasure, spreaded, injustice and lies, only power will be respected, women will be like men and so on.

Similarly, after three months,

when all the ceremonies were completed and Rishis were about to leave, they saw a mongoose (मूँसा) whose half body shone (चमक) like gold jumped into fire pit (अग्नि कुंड) to rubbed its normal side which was black and burnt and it left the altar (अभिषेक मंडप) dissatisfied look.

At its dissatisfaction, Rishis asked it about its dissatisfaction, it replied that long ago when it rolled/rubbed in same kind of yagna its half body turned into gold so it tried to turn remained body golden again but it didn't happen. The Ashwamedha yagna of Yudhishthira was not much ritual ~~and~~ and effective like the previous yagna on which mongoose has its half body goldened because the Ashwamedha yagna was much about royalty and power rather than the charity.

Dharmya, guru of Pandavas, predicted that before any war, the total ~~and~~ dharma rested with Pandavas in quarter quantity with each Pandava and Draupadi and Krishna controlled them. However, it would continue no longer because at the dawn (beginning) of Kali yuga Arjun will become proudy, Bhishm will have higher focus on food & health, Nakula focused on

pleasure and Shahdeva will be rude and arrogant. Only Yudhishthira will hold his quarter dharma but no any else Pandava. And this quarter dharma of Yudhishthira will sustain ~~the~~ world till its final lifespan and when this quarter dharma would be abandoned the praby would occur.